REPORT RESUMES

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A CONFERENCE ON RESEARCH IN MUSIC EDUCATION. FINAL REPORT.
BY- CADY, HENRY L. AND OTHERS
OHIO STATE UNIV., COLUMBUS, RESEARCH FOUNDATION
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A CONFERENCE ON RESEARCH IN MUSIC EDUCATION SPONSORED BY THE USOE AND THE OHIO STATE UNIVERSITY WAS HELD IN COLUMBUS, OHIO, FEBRUARY 26 THROUGH MARCH 4, 1967. THE CONFERENCE WAS DEVELOPED BECAUSE OF CONCERNS ABOUT THE QUALITY AND QUANTITY OF RESEARCH IN MUSIC EDUCATION. THE PURPOSE OF THE CONFERENCE WAS THE DEVELOPMENT OF GUIDELINES FOR THE IMPROVEMENT OF RESEARCH IN MUSIC EDUCATION. THE PROBLEMS DISCUSSED INCLUDED THE NATURE OF RESEARCH PECULIAR TO MUSIC EDUCTION, AS DIFFERENTIATED FROM OTHER FIELDS OF RESEARCH, SUCH AS MUSIC HISTORY, MUSIC THEORY, MUSIC PERFORMANCE, EDUCATION, PSYCHOLOGY, AND SOCIOLOGY. PRIORITY AREAS FOR RESEARCH WERE IDENTIFIED, MOST OF THEM BEING UNINVESTIGATED BEHAVIORAL PROBLEMS IN THE TEACHING AND LEARNING OF MUSIC IN THE SCHOOLS. THE NEED TO REDESIGN GRADUATE EDUCATION IN ORDER TO DEVELOP A VARIETY OF VERSATILE RESEARCHERS WHO CAN IDENTIFY AND EXAMINE CONTEMPORARY PROBLEMS IN MUSIC EDUCATION WAS AGREED UPON. THE ORGANIZATIONAL FORMS FOR FACILITATING RESEARCH WERE DISCUSSED AND RECOMMENDATIONS MADE. METHODS FOR THE MORE EFFICIENT USE OF RESEARCH WERE DISCUSSED AND SUGGESTIONS PROJECTED. THESE DELIBERATIONS WERE INCLUDED IN FIVE COMMITTEE REPORTS UNDER THE GENERAL HEADING "PROJECTIONS FOR CHANGE IN RESEARCH IN MUSIC EDUCATION." THE CONFERENCE PARTICIPANTS INCLUDED SEVENTEEN MUSIC EDUCATORS WHO WERE SELECTED ON SEVERAL BASES--(1) RECOGNIZED RESEARCHERS IN MUSIC EDUCATION, (2) MEMBERS OF THE MUSIC EDUCATORS RESEARCH COUNCIL, AND (3) INDIVIDUALS IMPORTANT TO MUSIC EDUCATION RESEARCH. CONSULTANTS FROM VARIOUS MUSIC AND NONMUSIC AREAS OF ENDEAVOR PROVIDED PAPERS AND ASSISTANCE. (AUTHOR)

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A CONFERENCE ON RESEARCH IN MUSIC EDUCATION

May, 1967

U. S. Department of
Health, Education, and Welfare

Office of Education
Bureau of Research

The Ohio State University
Research Foundation
Columbus, Ohio 43212

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A

CONFERENCE ON RESEARCH

IN

MUSIC EDUCATION

U.S. Office of Education Project Number 6-1388
Contract Number OEC3-6-061388-1541

Henry L. Cady
Project Director

May 31, 1967

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The Ohio State University
Columbus, Ohio

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ACKNOWLEDGMENTS

A complex endeavor which is people-centered rather than idea- or thing-centered requires the participation of many persons and, more important, many persons of goodwill. The success of this Conference rested in the participants and the Conference Staff. It is one thing for a Conference to be conceived but it is another for those involved to accept and use constructively what has been planned for them. In particular, the Music Educators at the Conference were grateful for the generousness of the Consultants who gave of their knowledge and experience so willingly. The Editorial Advisory Committee, comprised of Harold W. Arberg, Robert A. Choate, E. Thayer Gaston, Robert G. Petzold, and Erwin H. Schneider, added to their responsibilities an assistance to the Director which led to the general Committee structure and the content of the Committee reports. The five Committee Chairmen accepted responsibilities which were complex and trying but fulfilled them well.

The Director is personally grateful to Erwin H. Schneider who collaborated in proposing the Conference and in the initial formulations of its content. He is grateful also to the Conference Staff for their able, cheerful, and creative assistance. The advice and editorial assistance of Charles H. Benner have been indispensable. The interest of the research assistants, W. Ronald Kenreich and S. Aaron Hyatt, and the Conference Secretary, Susan W. Bohnke, in their tasks and their concern for an excellent Conference will be remembered with pleasure.

Part I

THE CONFERENCE

PROBLEM

Research in Music Education has been an endeavor with increasing frequency since the 1920's at least. Because research reports and their findings have remained in diverse sources, few results of this research have been known or used and the quality of this research misunderstood. A recent bibliographic project[1] found not only valuable information but also serious inadequacies of several kinds. It is evident that these inadequacies in Music Education research must be considered, i.e., they need to be examined and projections for corrections developed. Such considerations seem to be a prerequisite to the reduction of these inadequacies. There is an urgency in this matter because research is the means by which a body of valid information and knowledge is developed. Music Education finds a pressing need for a body of knowledge concerning the teaching and learning of music. The problem areas in its research and the development of research, therefore, must be defined and examined.

As a result of studying the literature produced by "research" in Music Education, one can find the following problem areas:

1. College and university faculty in Music Education generally do not understand the meaning of research.
2. The concepts of faculty members are vague concerning what problems are relevant to Music Education.
3. The faculty in Music Education generally do not understand research techniques to the extent that they can produce competent research themselves or advise students in planning their research projects.
4. Graduate programs generally do not provide competencies adequate for the research problems undertaken by graduate students both philosophically and technically.

To sum up the situation, research in Music Education is not as plentiful nor as adequately performed as it should be. In addition, it is apparent that changes in this general condition cannot be foreseen without a concerted effort to bring about change.

The concern for the meaning of research in Music Education has an interesting history. There are noble names in that history. Will Earhart in 1936 called for a concerted effort on the part of the National Music Supervisor's Conference to use research findings:

> ...I find these different researches and studies are often limited in influences because they do not come before the National body and are not taken into a coordinated and full supported scheme by the whole membership.[2]

Jacob Kwalwasser was deeply concerned about the superficial, authoritarian guess-work which permeated the National Convention and regrettably still does. In 1935 he wrote:

> ...If we are to elevate music and give it a status that it has not yet realized, we must turn from the method of authority and pursue a method which promises enlightenment and greater understanding. We must search for the truth wherever it may lead. We must doubt the value of ready-made and oversimplified solutions. We must be wary of personality domination. Every teacher must be fired by the research spirit. Only by searching for the truth with care and diligence, observing the natural responses of children to various teaching situations, and studying the data so observed are we likely to convert music teaching into music pedagogy; music training into music achievement; and music learning into a joyous experience for both the child and the teacher.[3]

Concerning the use of research, M. E. Wilson wrote the following in 1935:

> The difficulty in the way of music research today is not that there have been too many errors in the investigations nor that the skeptics have been too noisy with unwarranted criticism, but that the average music teacher has not the least interest in what is investigated or proved by scientific research....Our solution lies in stimulating the teacher himself to carry on some research.[4]

In 1932, Kittle took his colleagues to task for failing to use the scientific method where this was appropriate:

> ...We are striving always for a higher level of musical activity in this country than the present one, but scientific research should enable us to more effectively maintain the present level, and through elimination of the unnecessary phases of our work, allow us to train our students more thoroughly in the ways that will lead to our goal of genuine and lasting appreciation of music. Science and art can be combined, and the proper combination will mean much to the future success of our work.[5]

Words of these kinds are recorded as early as 1928, when Dykema called for more studies and research along at least three lines --"(1) musical endowment, (2) methods of teaching, (3) the results of teaching, practice, growth or whatever is added to endowment produces the musical power of the individual as he grows up."[6]

It is evident that music educators have heard from a minority for a long time that they must use the scientific method where appropriate and that they have lived with an abundance of unverified opinion which has been loosely called "research". One basic problem seems to have been a confusion about the meaning of research and the relationship of research to the needs of Music Education. The present inadequacies apply to the entire professional gamut -- from kindergarten to doctoral programs in professional education. No level of Music Education has received the data (or enough of it) to answer longstanding questions. As far as faculty research is concerned, many institutions have not even encouraged appropriate research methodologies. Published polemics seem to have been an adequate fulfillment of a faculty research requirement, where such have existed.

A recent survey revealed that of 144 institutions known to offer graduate studies in Music Education, 25 percent (36 institutions) required post doctoral research by faculty as a prerequisite to advising graduate student research. It was evident that continuing research endeavors were not expected generally as a competency qualification in the guidance of research. Also, it is significant to note that in the period 1930-62, only twelve percent (29 institutions) of 248 reporting institutions produced approximately sixty percent of the studies by students and faculty. For that period, 449 titles were reported by faculty respondents as personal research projects. Among these, only twenty percent (89 studies) could be considered research. The remainder were musical compositions and essays, some of the latter being on topics removed from the central concerns of Music Education. It is as though the profession was not primarily concerned with its fundamental obligation to solve the problems involved in the teaching and learning of music.

Implicit in these conditions were several questions which seemed to be of fundamental importance and which seemed to indicate the first steps toward the improvement of research conditions in Music Education. For example:

1. What is Music Education?
2. What is research in Music Education?
3. What are the prerequisites to research and researchers in Music Education?
4. What is the relationship of Music Education research to other disciplines -- educational philosophy and history, psychology, social psychology, sociology, musicology, music theory, and music performance.
5. What is the relation of Music Education research to:
    a. the school music teacher?
    b. the educator of teachers?
    c. the school child -- normal and abnormal?
    d. the college and university program in teacher preparation?

Before adequate answers to these questions could be found, it was believed that some kind of agreement was necessary as to what Music Education is and what its needs are. Too, mutual encouragement had to be provided for those who seek these answers in their scattered institutions. Those few who have done competent research and who have been educating competent researchers have long been in need of a purposeful gathering, a gathering which would be not only mutually beneficial but also productive for Music Education as a whole.

Specifically, it was evident that researchers in Music Education had to have an extended, single period of time for communication and mutual encouragement. As a prerequisite to the improvement of research in Music Education, it was believed that a conference was needed at which mutual concerns could be shared and a position taken by acknowledged researchers concerning the relationship of research to the present state and future welfare of Music Education.

References

1. Schneider, Erwin H., and Henry L. Cady. "Evaluation and Synthesis of Research Studies Relating to Music Education," U. S. Office of Education Cooperative Research Project Number E-016, The Ohio State University, 1965.

2. Earhart, W. "Coordination of Research in Music Education." Music Educators National Conference Yearbook, 1936. Chicago: The Conference, 1937, p. 283.

3. Kwalwasser, Jacob. "Significance of Research to Music Education." Music Educators National Conference Yearbook, 1935. Chicago: The Conference, 1936, p. 162.

4. Wilson, M. E. "Teacher's Use of Research." Music Educators National Conference Yearbook, 1935. Chicago: The Conference, 1936, p. 164.

5. Kittle, J. Leslie. "Music Education and Scientific Research," Music Supervisors Journal. 18 (May, 1932), 39.

6. Dykema, Peter W. "A Review of Achievements and an Outline of Studies Still to be Made." Supervisors National Conference, Journal of Proceedings, 1928. Chicago: The Conference, 1928, p. 282.

OBJECTIVES

This project proposed the development and execution of a Conference on Research in Music Education. The purpose of the project was a clearer definition of the role, prerequisites, and goals of research in Music Education which would be authoritatively supported by a group of researchers in Music Education. It was expected that such a definition would establish criteria by which a greater quantity of relevant and competent research would be undertaken.

The purpose of the Conference was to bring together a group of researchers and consultants from related endeavors who would provide a clearer definition of the nature and function of research in Music Education; an evaluation of the current state of research in Music Education both as a concept and an activity; and an exposition of the realistic relationships between the researcher's interests and the needs of Music Education as well as the relationship between the interests of research in Music Education and the interests of research in other disciplines. More specifically the Conference objectives were:

1. a clarification of the perimeters of Music Education;
2. a clarification of research in Music Education;
3. an exposition of the relationship between Music Education research and other disciplines such as psychology, sociology, and musicology;
4. an estimate of the responsibilities of research to the various facets of Music Education, i.e., to the educational program in music from kindergarten through doctoral programs;
5. an analysis of prerequisites to research activity and to the education of a researcher;
6. a suggested program for the education of researchers who would be competent to meet the complex needs of school music in an increasingly complex society;
7. a suggested list of priority projects for researchers in Music Education;
8. a suggested set of criteria for research relevant to the unique activities of Music Education in terms of the developed definition.

PROCEDURES

The project was composed of three phases -- preparation, meeting, and report.

Phase I

The first phase of the project was devoted to the preparation of materials, obtaining data, ordering the details of the meeting, and the selection of personnel.

The preparation of materials involved several items. First, a paper composed by the Conference Director for a previous project and entitled "Toward a Definition of Music Education" was revised and amplified. This paper was circulated among conferees as a generative device. Second, forms for compiling data were prepared concerning (a) the status of research in Music Education, and (b) the status of support and programs for research in institutions offering graduate degrees in Music Education. Third, the forms necessary for the functioning of the Conference were developed.

Data were obtained from a variety of sources providing the conferees with an overview of the types of research performed in Music Education, the relationship of types of research to graduate programs in Music Education, and the topical areas in which that research was done. Also obtained were data about administrative structure, degree programs, curricular content, and forms of institutional support for research programs in Music Education.

Personnel for the Conference were selected on a variety of bases. These were as follows:

1. Veteran researchers in Music Education.
2. Members of the Music Educators Research Council.
3. Grantees of the U.S. Office of Education.
4. Individuals representing positions of crucial importance for the development of research in Music Education.
5. Scholars from endeavors related to Music Education acknowledged for their potential value as contributors to the Conference.

The Conference participants included seventeen scholars from Music Education and single scholars from the areas of music history, music theory, psychology, sociology, education (research, training educational researchers, and the utilization of research), federal support for research, and institutional organization for research. For a listing of the participants, see the section below entitled "Participants."

The organization of the meeting was devised in several ways. The final form of the meeting placed all of the Conference papers and plenary discussion of the ideas needed in the Conference within the first three and one-half days. The intent was an overview of the problems before Music Education research. Some of these had never been coherently and collectively examined such as the differentia which distinguishes Music Education research, the implications of new problems in Music Education for the education of research specialists and the difficulties of implementing research findings. Therefore, the first task of the Conference was established as definitional. The second was self-education. The third was the composing of a report which would be a means for sharing the deliberations of the Conference, particularly a statement for new directions. Toward these ends, scholars were requested to prepare papers, chair sessions, and work in committees.

Phase II

The Conference consisted of a seven-day meeting in the period of February 26 through March 4, 1967. Prior to and during the Conference, an office was set up in a room at The Hospitality Inn, Columbus, Ohio, where the Conference was held. Technical procedures included the taping of all sessions by Ediphone and the reproduction of papers as quickly as possible. In addition to the Conference Secretary, a night typist assisted in the production of the papers. During discussions which were intended to lead toward group action, a person was assigned the task of recorder.

The Conference Schedule may be found below. It will be noted that a general institutional context for research was established at the opening session. The definitional problem was introduced at the second session by means of two critiques of the generative paper, "Toward a Definition of Music Education". This was followed by two sessions including six papers from related endeavors which would help clarify the definitional problem. In the fifth session an accord was reached as to how the primary concern of the Conference should be stated. This is reported in Part II of this report. During these sessions devoted to the definitional problem, a single scholar was assigned the task of recorder and synthesizer of these deliberations. The product of his labors was read at the beginning of the sixth session. The remaining plenary sessions -- four -- were devoted to the mutual education of the participants concerning the spectrum of problems facing Music Education research. The means for this mutual education was through prepared papers and discussion.

Beginning with the tenth session, the participants were divided into five committees. The consultants were assigned to these committees on a rotating basis. A chairman for each committee was appointed prior to the Conference. His task was to see that a rough draft of his committee's report for the Conference product was completed by the final session of the Conference. He was further enjoined to request assistance and opinions from other conferees and to acknowledge the desire of individuals to make suggestions for that committee's deliberations, assuring the full representation of the Conference's thinking and the cross-fertilization of ideas. Each committee was assigned a topic on which it would develop a paper using the papers of the consultants wherever this was appropriate. The topics assigned to the committees were as follows:

1. The Nature of Research in Music Education.

2. Problems for Research in Music Education.
3. The Training of Music Education Researchers.
4. The Facilitation of Music Education Programs for Research.
5. The Utilization of Research in Music Education.

Outlines of these papers were presented to a plenary session for suggestions and questions. The rough draft of the paper was reproduced for review by each member of the Conference at the last session, their comments being recorded on one of two copies given them. The annotated copy was returned to the Conference Director at the close of the session.

The annotations made at the last session were compiled by the Conference Director and sent to the Committee Chairmen. The papers were revised by the committees and returned to the Director for inclusion in the Final Report.

Phase III

The reportorial phases of the project included three types of activities. First, the Final Report in the project was composed. Second, a two-day dissemination symposium was planned by the Division of Music Education at The Ohio State University. Third, articles were composed for local and national journals and magazines.

CONFERENCE SCHEDULE

First Day	Introductory Session a) Orientation and Papers 1. Research in the School of Music 2. Research in the University b) The Definition of Music Education
Second Day	Research in Related Disciplines a) Papers: Research in Music History, Music Theory, and Music Performance b) Papers: Research in Sociology, Psychology, and Education c) Plenary Discussion of Papers
Third Day	Research in Music Education a) Status Report: Research in Music Education -- 1963-67 b) Paper: The Meaning of Research in Music Education c) Paper: The Problem of Competency
Fourth Day	Preparing for and Performing Research a) Status Report: Graduate Programs in Music Education b) Paper: Training Educational Researchers c) Report: U.S.O.E. Programs for Research d) Paper: Utilization of Research e) Committees charged and convened
Fifth Day	Committees Continue
Sixth Day	Committees Continue a) Plenary Session: Committee Progress Reports b) Committees reconvene
Seventh Day	Committees Continue a) Committees reconvene b) Committees submit reports for Plenary critiquing c) Conference adjourned

PARTICIPANTS

Conference Staff

Cady, Henry L.	Director
Benner, Charles H.	Assistant to the Director
Hyatt, S. Aaron	Research Assistant
Kenreich, W. Ronald	Research Assistant
Bohnke, Susan W.	Conference Secretary

Conference Consultants

Arberg, Harold W. Music Education Specialist, Arts and Humanities Branch, U. S. Office of Education. Area: USOE Programs for Research.

Blanke, Virgil E. Chairman, Division of Development, School of Education, The Ohio State University. Area: Utilization of Research.

Brickell, Henry M. School of Education, Indiana University. Area: Utilization of Research.

Garrett, Alfred B. Vice-President, Office of Research, The Ohio State University. Paper: Research in the University.

Hopkins, John E. School of Education, Indiana University. Area: Training of Researchers.

Gephart, William J. Director, Office of Research Services, Phi Delta Kappa. Area: Educational Research and Problem of Competency in Design.

Lathrop, Robert L. Chairman, Graduate Faculty in Education, The Pennsylvania State University. Area: Psychological Research.

McGaughey, Janet. Department of Music, University of Texas. Area: Music Theory.

Reckless, Walter C. Department of Sociology, The Ohio State University. Area: Sociological Research.

Rigsby, Lee. Director, School of Music, The Ohio State University. Paper: Research in the School of Music.

Stone, David L. Dean, College of Music, Temple University. Area: Music History.

Music Educators

Andrews, Frances M. Head of Department of Music Education, The Pennsylvania State University; Investigator USOE Project OE 6-10-002, "Development of a Technique for Identifying Elementary School Children's Musical Concepts."

Britton, Allen P. Professor and Associate Dean for Doctoral Studies and Chairman of the Department of Music Education, The University of Michigan; Editor of Journal of Research in Music Education; Past President of Music Educators National Conference.

Choate, Robert A. Professor of Music, School of Fine and Applied Arts, Boston University; Member of National Council of the Arts in Education; Director of the Music Educators National Conference "Tanglewood Project."

Dubois, Charlotte. Professor of Music and Music Education, The University of Texas; Member of Research Council for the Music Educators National Conference; Member of Committee on Music in Schools and Higher Education of the Music Teachers National Association.

Gaston, E. Thayer. Professor of Music and Director of Music Therapy, The University of Kansas; Founding member National Association of Music Therapy; Investigator USOE Project F-044, "An Analysis, Evaluation, and Selection of Clinical Uses of Music in Therapy."

Gates, Everett. Chairman of Music Education Department, The Eastman School of Music; Member of Research Council for the Music Educators National Conference; Research Chairman for the College Band Directors National Association.

Glenn, Neal E. Professor of Music and Head of Music in the University Schools, The University of Iowa; Investigator USOE Cooperative Research Project 5-0235, "The Development of Content and Materials for a Music Literature Course in the Senior High School."

House, Robert W. Head of Department of Music, The University of Minnesota, Duluth; Chairman of Committee on Teacher Education in Music for National Association of Schools of Music; Consultant in the revision of the Music section in the Graduate Record Examination.

Kyme, George A. Supervisor of the Teaching of Music, Lecturer in Education, and Lecturer in Music, The University of California, Berkeley; Investigator USOE Cooperative Research Project Number 254, "Junior High School Music Study."

Lehman, Paul R. Associate Professor of Music Education, The University of Kentucky; Chairman of the Research Council for the Music Educators National Conference; Founder and former Editor of the Colorado Journal of Research in Music Education.

Leonhard, Charles C. Professor of Music, The University of Illinois; former member of the Research Council for the Music Educators National Conference; Editorial Committee of the Journal of Research in Music Education.

Morgan, Hazel B. Lecturer in Music Education, Claremont Graduate School and University Center; Investigator USOE Cooperative Research Project Number 5-004-66, "An Evaluation of Adequacy of Graduate Music Offerings at California Colleges and Universities."

Petzold, Robert G. Chairman of the Department of Curriculum and Instruction, School of Education, The University of Wisconsin; Member of the Research Council for the Music Educators National Conference; Investigator in three USOE Cooperative Research Projects.

Schneider, Erwin H. Professor and Head of Division of Music Education, School of Music, The Ohio State University; Investigator USOE Cooperative Research Project Number E-016; Member of Research Council for the Music Educators National Conference.

Sears, William W. Associate Professor of Music Education and Music Therapy, School of Music, Indiana University; Editor of the Bulletin for the National Association of Music Therapy.

Wersen, Louis G. President of the Music Educators National Conference and Director of Music, School District of Philadelphia, Pennsylvania.

CONCERNS OF THE CONFERENCE

Because the deliberations of the specific committees of the Conference are formalized in Part II of this report, the following discussion has been derived by the Conference Director from the deliberations of the Conference. Some of these concerns are not explicated in the reports of the Committees and their preservation is considered appropriate and important.

The Definitional Problem

An understanding of the nature of Music Education is difficult to achieve. It is particularly difficult to find a consensus because any process inclusive of diverse elements has numerous central variables possible to it. The issue before the Conference was the distinguishing characteristic of Music Education. There were those who were willing to establish a narrow definition. There were those who were concerned that the price for a narrow definition would be professional myopia. It is difficult to define such an endeavor and yet not create fences which would separate musicians or separate educators or separate musicians from educators or vice versa. Because of this and other concerns expressed below, it was maintained on the one hand that the Conference should not attempt to define Music Education. On the other hand, the dearth of information and the relatively unprofessional state of the body of information in Music Education encouraged others to desire a definition of some kind for the profession so that a concentration of efforts would be encouraged.

As an endeavor, Music Education covers all aspects of musical and educational enterprise. It also includes aspects of psychology, sociology, and anthropology, to name a few of Music Education's relatives. This is revealed in the kinds of research performed by Music Educators and their students. As a result, there is no body of knowledge which can be called Music Education, peculiarly. In spite of this, there are administrative organizations using the term 'Music Education' in their titles. These apparently dichotomous facts seemed to be acceptable to some participants in the Conference while others considered such a dichotomy as a reason for seeking a definition of Music Education.

It was agreed that a national boundary is an inappropriate fence for knowledge. How children learn in Peru is important because their mode of learning may be of use to the child in the United States. In other words, any knowledge may be of interest and use to the American Music Educator. This principle would hold true for any form of locally derived knowledge. However, there were differences of opinion about the priorities of concerns for types of information and who should be responsible for the obtaining of that information.

The Problem of Interest vs. Responsibility

The difficult problem of distinguishing between interest and responsibility in Music Education was explored. It was suggested that persons who occasionally make a contribution to Music Education are professionally Music Educators. The exception made to this was based on the idea of primary or "ultimate concern." The colleagues of the Music Educator who are also called musicians are not primarily concerned or responsible for the improvement of music in the schools. The crux of this point lies in the word "primarily." Inversely, those primarily responsible for music in the schools must have interests beyond the immediate. The major issue was the implication for research. There was concern about the need for a variety of information; and yet encouragement was needed for the examination of the more urgent and specific problems in Music Education, i.e., the teaching and learning of music in formal situations or schools.

Although the right and privilege of a researcher to investigate problems of primary concern to him personally was recognized, it was also recognized that a peculiar set of problems exists in the conjoining of music and education. In order to find answers to questions of this peculiar kind, Music Education must develop scholars who can research these peculiar problems. The responsibility of Music Education was recognized to be one of developing a body of knowledge for its own needs. It was suggested that the teaching of a subject requires a different kind of knowledge about a subject than the knowledge of the subject itself. Further, if one accepts the school itself as a subculture, then that "different kind of knowledge" includes the influence of the subculture on the acquisition of that knowledge. Concerted research on problems of this kind do not preclude the rights and privileges of individuals to pursue their own interests. However, it does establish a framework which does indicate the relevance of a researcher's work to the informational needs of the profession.

The Problem of Formal vs. Informal Education

The relationship of children's musical behavior outside of the school as compared with that found in the school became a point of discussion and continuing concern. Because of the lack of valid knowledge about the teaching and learning of music within the dynamics of the school setting, it was expressed that Music Education had enough to concern itself within the school. On the other hand, the fact that music is learned informally or taught in other settings than the formal school caused some participants to object to a narrow concern. It was agreed that knowledge of the whole child was essential because informal behaviors may well provide directions for teacher-pupil behaviors in the school setting. Research, then, should concern itself with the whole child so that the entire gamut of music educational enterprise may be improved. However, this broad view left unanswered a basic question, namely, if research energies are spread over the entire gamut of music educational enterprise, how will the basic and urgently needed information be obtained for the teaching and learning of music in the schools?

Part II

PROJECTIONS FOR CHANGE IN MUSIC EDUCATION RESEARCH

Preface

The product of the Conference was five reports projecting changes needed in Music Education research. These reports were a result of four days of briefing and discussion followed by three days of Committee writing with subsequent refinements. The reports were intended to be generative. They are certainly not definitive nor exhaustive. The reader may find here contentious concepts concerning the methods by which the profession should proceed in research. Too, he may find omissions. If the result of the papers is an improvement in the conditions of research in Music Education, the reports will have served their purpose, their deficiencies notwithstanding.

Each report is credited to the persons who composed it. In addition, credit must be given to the consultants who migrated among the Committees, assisting wherever they were needed. Their contributions in the formative stage of these reports cannot be emphasized enough. It should be noted also that the members of all Committees had the privilege of expressing their views to any other Committee.

The role of the Editor concerning these papers has been that of an assistant to the Committee Chairman. Where substantive changes in the report were believed to be appropriate by the Editor, these have been incorporated only with the approval of the Committee Chairman. There is one editorial consistency which the Editor imposed on these reports. The term 'Music Education' has been capitalized to indicate that a limited meaning of the term was a focal point in the thinking of the Committees. That limited meaning was expressed by the Conference as follows:

> For the purpose of this conference, we are primarily concerned with the responsibilities of the professional music educator for the teaching and learning of music in the schools of our country.

RESEARCH IN MUSIC EDUCATION

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Introduction

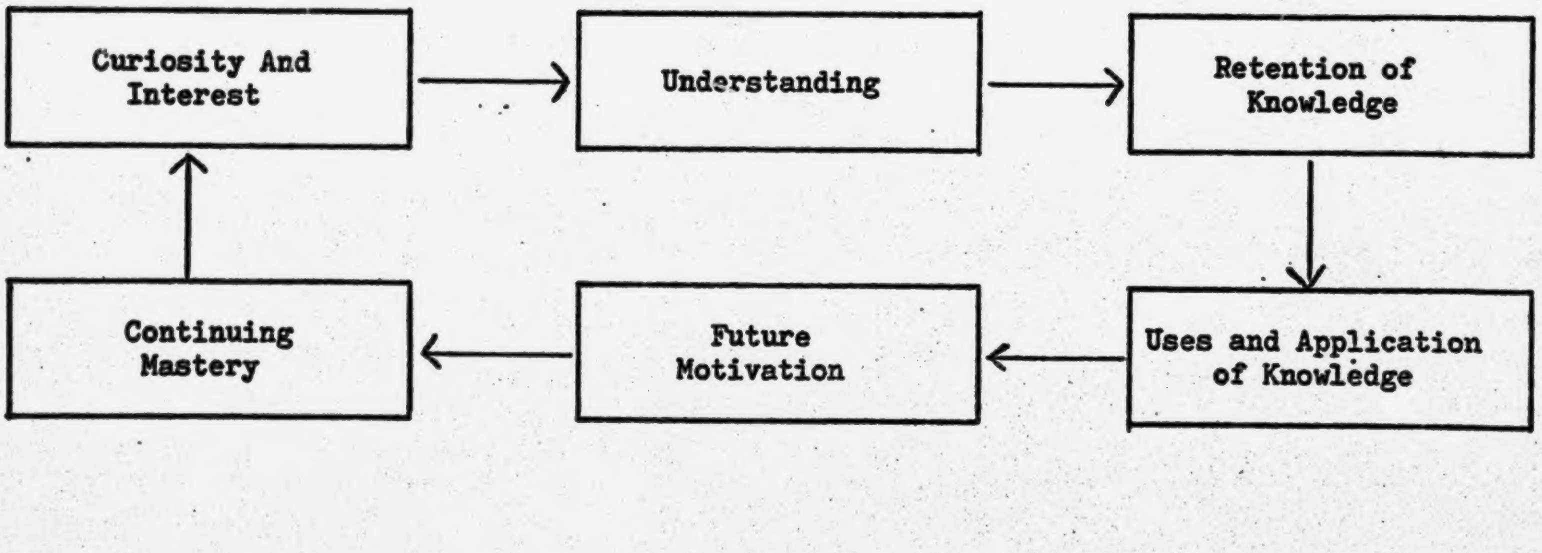
Man, in his search for knowledge and an understanding of himself and of the phenomena in the world which surronds him, has posed a number of basic questions that are philosophically oriented. In seeking information which would help him deal with these broad concerns, he has utilized a variety of methods ranging from personal belief and experiences to scientific inquiry. Viewing man as an intellectual being, Garrett has identified the following as primary objectives:

1) He searches for an interpretation of the universe. (Science is concerned with reality, the nature and identity of the universe.)

2) He searches to discover how to live most effectively in the universe he has learned to interpret. (These become the concerns of the social sciences and the humanities.)

3) He searches how he can communicate this information about reality to his fellow man. (These are the central concerns of symbolic logic, mathematics, language, and the arts including music.)[1]

The continual process of inquiry leading toward the attainment of these primary objectives may, according to Garrett, be viewed as a cycle:[2]



Research, however defined, may occur at each step in the cycle because it is a methodical procedure for dealing with basic questions. However, because the knowledge thus acquired modifies the preceding as well as the following steps within the cycle, the actual attainment of any of the three primary objectives is but a theoretical possibility.

Not all intellectual activity, even such legitimate enterprises as philosophical speculation based on the synthesis of information, can be called "research." Research, as a methodology, utilizes the principles and processes generally agreed upon for the scientific method. A substantial body of literature exists relative to the nature of research, the functions and purposes of the several types of research, and the characteristics of valid and reliable research methodology. Therefore, there is no reason to discuss this information in detail. The reader is aware that the scientific method rests upon certain fundamental assumptions. With respect to natural phenamena, or fact, it must be assumed that these do not occur by chance but are determined by antecedent events; that a given phenomenon is relatively consistent; and that phenomena, because of distinguishing characteristics, may be classified into a coherent and unified structure. With respect to psychological processes, it must be assumed that the observer is aware of the importance of reliable and objective observation; that he develops systematic methods for recording and retaining objective data; and that he applies objective thought and logical reasoning to the interpretation of data and formulation of generalizations.

The research process begins with an identifiable problem and proceeds to the identification and classification of facts, the utilization of these results to search for new facts not part of the current knowledge, and generalizing on the basis of all information to explain certain events or to modify subsequent events. Problems, according to Gephart, may be readily identified by examining the results of research and our accumulated knowledge in order to locate situations in which there exists: (1) an unverified fact, (2) conflicting facts, (3) an absence of information, or (4) an anomoly.[3] In order for a product of research to be valid and reliable it must satisfy all of the aforementioned criteria established for objective study and systematic inquiry. Schneider and Cady, among others, have used the term 'competency' to refer to validity and reliability.[4] Van Dalen believes that the researcher himself must constantly appraise the technical shortcomings of his own work in order to improve the quality of that work. An extensive check list of criteria questions to be used in evaluating "quality" is given by Van Dalen[5] and cited, in part, by Schneider and Cady.[6] Gephart does not use "competency" when referring to the quality of judgement of research, but does feel that the "soundness of knowledge gained from research effort is directly proportional to the soundness of the research techniques employed."[7] The "methodological adequacy" of research can be judged in terms of: (1) the nature of the logical argument inherent in the study, (2) the degree of control in generating data, and (3) the analysis procedures which have been utilized.[8] The importance of criteria for education, regardless of the particular term that is used, cannot be emphasized too strongly, particularly as research findings might be applied to new problems and procedures.

It can be seen that research in the life of man deals not only with the physical environment, but with a complex of sociological, psychological, and biological factors. The observer of these factors is faced with the interdependence and interrelatedness of them; they are not discrete and yet gaining knowledge and understanding of them often requires some form of individual treatment. This lack of discrete differentiation is further compounded by the subjective phenomena which are the concern of phenomenological psychologists. Since man is a living organism in a time continuum, his psychological and social behaviors have the characteristic of nonrepeatability. The observer of this nonrepeatability is therefore limited to the temporizing methods of the social scientist and the subjectivity of the humanist scholar.

Research in Education

The term 'education' may be used to identify that process by which the teacher attempts to facilitate the learning of the pupil, or to identify a broad field of professional specialization. It is difficult, therefore, to know whether the term 'education' refers to the broad professional concerns of the individual or is an operational identification of a teacher. Consequently, when one views the total field of education as a social science, it is apparent that there will be many ways of identifying areas of research relating to this field.

Education may be viewed as a social institution which man has contrived for his own welfare. It is a social institution and its characteristics are commensurate with human characteristics. Because the content of education is human-centered, the discrete elements in the process of education become, by definition, nonrepeatable. Observers of it then tend to be primarily social scientists or humanist scholars. These observers have developed four general modes of inquiry, or methods for conducting research, each with its own strategy -- descriptive, experimental, historical, and philosophical. Each of these modes of inquiry examines the sociological, psychological, and biological man in the physical setting of formal or informal education.

There are, as has been mentioned, a variety of ways of defining or identifying the dimensions of education research. Gage suggests a conceptual framework which specifies three major classes of variables:

1. Central variables - defined as such only because they represent the center of concern.
2. Relevant variables - these relate to central variables in that they are antecedents, consequences, or concurrents of the central variable.
3. Site variables - these are held constant and are used to characterize the situation in which the other variables are studied.[9]

This conceptual framework can then be applied to research in any one or more of the following areas: (1) teaching and the teacher, (2) learning and the learner, (3) curriculum and the subject matter content of the curriculum, (4) the social interactions between any two or more of these areas such as the teacher and the learner. The central variables for one area become the relevant variables when another area is concerned. For illustrative purposes, Gage's conceptual framework applied to research on teaching is summarized as follows:

Central Variables - refers to a behavior or characteristic of teachers.

1. Teaching methods
2. Instruments and media of teaching
3. Teacher's personality and characteristics

Relevant Variables - related to but not central when considering the behavior or characteristics of teachers.

1. Social interaction in the classroom
2. Social background of teaching

Site Variables - these variables held constant with the teacher's behavior viewed as a central variable.

1. Grade level
2. Subject matter[10]

Educational research may, according to Clark, Hilgard, and Humphreys range along a continuum from the most basic research to the most applied research, i.e., to demonstrations of teaching methods in the school.[11] This continuum, with the necessary interaction between phases, is arranged here vertically rather than horizontally for reasons of space:

1. Basic scientific investigation with the content indifferent, "pure" research carried on in psychology, research laboratories, etc.
2. Basic scientific investigation with the content relevant.
3. Investigations of educationally oriented problems.
4. Classroom experimentation in a contrived situation.
5. Field testing of procedures and materials in typical school settings.
6. Installation of programs in the widest possible basis.

Within these two contexts it becomes apparent that educational research can, depending on the nature of the classification system employed, embrace a wide range of studies. Furthermore, studies not normally identified as "education research" could, under these circumstances, also be considered as contributing significant information to the central or relevant variables. For example, the behavioral sciences of sociology, psychology, and anthropology could provide much valuable information to the more centralized concerns of education.

Research in Music

The field of music is, in many respects, far more diffuse than the field of education. Definitions of areas of concern within music vary according to the individual offering such a definition and the point in time at which such a definition is given. In general, there appears to be reasonable agreement that the broad areas, each including a variety of branches in which research can take place and in which teaching and learning occurs, are the following: (1) musicology, (2) music theory and composition, (3) performance, and (4) music education.

Musical scholarship, according to Palisca and others, might be considered as a disciplined study of music. Such study could be undertaken as a means to many different ends: performance, conducting, becoming acquainted with the art of composition, measuring the aesthetic values of music, or ascertaining the physiological, physical, or psychological nature of music.[12] Not all musical scholarship or disciplined study would necessarily qualify as research in music -- the determiners here might be the presence of those characteristics of scientific method as outlined at the beginning of this chapter.

Musicology is, according to Stone, a widely misunderstood term. It had its beginnings in the eighteenth century with the creation of musical historiography. Since that time these concerns have been broadened to embrace almost every kind of musical topic, from paleography to aesthetics and from theory to physics.[13] Glen Haydon begins his textbook with the statement "musicology is that branch of learning which concerns the discovery and systematization of knowledge concerning music."[14] Palisca gives an additional dimension when he says, "The musicologist is concerned with music that exists, whether as an oral or a written tradition, and with everything that can shed light on its human context."[15] Bukofzer believed that the goal of musicology was to provide those knowledges essential to understanding and intensify the aesthetic experience.[16] Palisca then identifies several fields that are related to, but not properly within the scope of musicology, such as: acoustics; physiology; psychology; pedagogical concerns in performance, composition, etc.; music theory; and aesthetic theory. Ethnomusicology is viewed as a branch of musicology rather than a separate field. These delimitations do not ignore the contributions of the several fields but Palisca believes them not to be the central concerns of the musicologist. He feels that the musicologist must have certain basic information in the related areas but that these basic competencies would need to be expanded in terms of the major interests and needs of the individual.[17] Admitting that the musicologist does not wish to have his field narrowly defined, it would seem to follow that its major areas would be historiography, paleography, and analytical theory. Research in these basic areas would be classified as "central" variables and research in the several other areas then become "relevant" or "site" variables. Within this context the individual musicologist has the freedom to pursue his primary research interests but the classification of the research would then depend upon the central variable which has been identified.

Music theory has been variously defined, according to McGaughey, as "the systematic investigation of music," "the learning of skills related to the practice of music," or "advanced study and research in the structure of music and musical systems."[18] Palisca's four categories of music theory are: (1) practical theory, which refers to systematizations of technique for training musicians; (2) creative theory relevant for training composers; (3) pure theory, which organizes the materials of music in some logical manner so that it expresses the philosophy of its author; and (4) analytical theory, which establishes a terminology for the analysis of music which has been derived from existing music. The latter area has been identified by Palisca as properly being a concern of the musicologist.[19] McGaughey proposes that "music theory encompasses those processes and activities which are aimed at revealing the nature of music itself" to include: (1) appropriate verbal and symbolic systems for communicating about music; (2) developing creative and performing skills as a means toward increased musical understanding; and (3) experience through hearing, seeing, and performing an extensive body of carefully selected literature.[20]

Research in the field of music theory would then include those relevant and systematic investigations which contribute to knowledge of the field as well as to the teaching-learning process in practical and creative theory. McGaughey identifies several kinds of research which could be classified under the "central variable": (1) descriptive studies of existing analytical tools, evaluation of materials of instruction, and identification of fundamental concepts; (2) historical research relevant to pure theory; (3) experimental research which is related to the teaching-learning process; and (4) philosophical research as relevant to either pure theory or analytical theory.[21]

The research, both in terms of knowledges and procedures, has obvious implications for each of the other three fields of music and depending upon the researcher and the essential content of the study, contributes to man's knowledge of the art of music.

Musical performance can be simply defined as the process of translating the work of the composer into the medium of sound so that it becomes readily available to the consumer. The central variables of performance, as suggested by Benner and Cady, would be: (1) the instrument itself; (2) the performer; (3) the musical score; and (4) the environment.[22] This broad view of performance admits the relevance of related areas of acoustics, physiology, sociology, musicology, psychology, and music theory since these, and other fields, can contribute significantly to the major concerns. For example, the musicologist can provide a variety of information dealing with early instruments, make available quantities of hitherto unknown music, and to identify authentic performance practices. Examination of the interactions between performer and audience have sociological and psychological implications and research in this area must be viewed as relevant.

The three fields of music thus far considered can be discussed separately only for purposes of convenience and classification. It is apparent that the total spectrum of musical knowledge and musical behavior results from the efforts in a variety of fields and sub-fields and that communication between fields must constantly remain open.

Research in Music Education

We have seen that research endeavors are directed, purposive, and intended to solve problems. Although the problem may be historical, philosophical, or behavioral, the concern of this report is primarily for the last of these. Music educators have been relatively well-schooled in the history of music, the performance of music, and the philosophical considerations for musical endeavors in the schools. However, there has been a long history of inadequate treatment of problems in terms of how human beings behave and what human beings are in the process of teaching and learning music. As will be seen in the report which follows, "Problems for Research," there is a host of problems in the area of human musical behavior which plague the music educator. He cannot solve these problems because he has no information with which to solve them. These range from methods for teaching the oriental musics to musical ability patterns in the apparently uneducable in music.

As one considers the contemporary scene and the musical endeavors in education, one is struck by the anomaly of conscientious and well-meaning music educators who are not using contemporary educational information nor the scholarly productions of their colleagues in ethnomusicology and musicology. There seems to be a discrepancy between the tempo of change in Music Education and other areas. Long-standing assumptions remain unquestioned. For example, the music educator has demonstrated little concern for the deprived child in Harlem, in the Watt's district of Los Angeles, or in the Hough district of Cleveland. The right of the individual child to be understood as a human being having problems peculiar to him and his group is an ironic omission in the explicit concerns found in the research of Music Education.

The fundamental problems of Music Education and therefore the challenge for research in Music Education are not the same as they were a few years ago. The American society has changed and with this change has come the need to change the procedures for helping students learn music and to change even what students should learn. The dimensions of research in Music Education, then, can no longer be considered as limited to the traditional historical and theoretical studies. It must include the gamut of musical behavior.

Music Education, like education, is a broad term which can be viewed as a process whereby a deliberate effort is made to facilitate musical learning or as a field of professional specialization. The major concern of this Conference has been to deal with problems in Music Education and an operational definition had to be developed. Interpretations ranged from "anything that deals with learning music is music education" to "music education is teaching music in the public schools." Bukofzer, in recommending a curriculum for college music in 1957, differentiated between education for music as the general cultural approach and education in music as training the professional composer, musicologist, and virtuoso performer.[23]

Schneider and Cady, following the rationale of Gage,[24] established a conceptual framework of Music Education resulting in the definition which is included in their original report.[25] This operational definition permitted the identification of five relevant major areas: (1) the teacher; (2) the student; (3) the teaching-learning process; (4) program of Music Education; and (5) constraining factors.

Critiques of the proposed definition and subsequent discussion resulted in arriving at the following definition of Music Education as the central concern of the Conference:

> For the purposes of this conference, we are primarily concerned with the responsibilities of the professional music educator for the teaching and learning of music in the schools of our country.

Acceptance of this operational definition provided the necessary guidelines for the work that had to be carried forward.

When one considers the research in a variety of fields both in music, in education, and in the humanities and social sciences, it is evident that many of the procedures and findings have implications for Music Education. However, in terms of the definition given above, many kinds of research endeavors potentially relevant to Music Education are not themselves research in Music Education. We must, of necessity, recognize that any definition is transitory and is based upon the experience of the moment. Furthermore, the particular interests, concerns, and directions of the individual researcher provide him with the freedoms to pursue his own goals unrestricted by anything except the logical rationale he employs in arriving at an operational definition. It is only when one begins to develop a conceptual framework for the classification, analysis, and evaluation of research that a definition becomes more rigid. At the same time, this does not rule out the possibility of other definitions at another time.

In terms of the responsibility for considering a range of topics dealing with research in Music Education, from the research problem to the utilization of research, it would seem to follow that a brief summary is in order. There should be no question as to the characteristics of research; it employs those procedures and techniques appropriate to the problem under consideration. The humanistic and behavioral aspects of Music Education must be constantly before researchers as they deal with the many problems which remain unsolved. The contribution of the other fields and disciplines provide information that may be either of peripheral or central interest to the given problem. The researcher himself is not one kind of person, with competencies in all areas, but rather will develop unique competencies which permit him to function as a member of a team.

In conclusion, there are several kinds of classification systems which may be employed in systematizing research. Any one could be considered appropriate under a given set of conditions:

1. Cognitive, affective, psycho-motor domains.
2. The teacher and teaching; the learner and learning; the curriculum and subject content of the curriculum; social interactions within and between these areas.
3. Central variables, relevant variables, site variables.
4. Basic research, developmental research, field testing, dissemination, instructional and school practices.

These classifications may readily be combined to provide a two-on-three dimensional system which might be more satisfactory. All of the classifications fall within the operational definition of Music Education and provide a basis for identifying problems as well as the functions of particular kinds of research.

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PROBLEMS FOR RESEARCH IN MUSIC EDUCATION

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Rationale

Music is a man-made phenomenon and the making of music is a form of human behavior. Because human behavior as well as the products of human behavior are observable, man and his music are subject to critical examination from many points of view. These points of view do not preclude the aesthetic values of music nor the concern for those values, but they do encourage scholarly research in areas which are amenable to studies of human behavior. Such studies would include, basically, the analysis of the human processes as they function in the making of music. In Music Education, they would include the student of music and the teacher of the student as well as the content appropriate to the experiences desired for the student of music in the school.

Some aspects of musical behavior in education seem to demand immediate and rigorous attention from a national viewpoint. Beyond these, the urgency for research in specific facets of any area may vary according to the problems identified in local situations. The identification of pressing problems in Music Education is in itself a matter of primary importance at the present time. The concern here is for those problems in human behavior which are believed to be general, nationwide, and urgent in the teaching and learning of music in American schools. These urgent problems are identified as constituting central variables and, therefore, major points of concern. Generally, they fall into five categories--The Student, The Teacher, The Teaching-Learning Process, The Content of Instruction, and The Constraining Factors. It is recognized that there is not a sufficient body of knowledge in any of these categories to guarantee valid behavior on the part of the practitioner or researcher in Music Education. The urgency of the situation indicates that these problems cannot be considered on an ad hoc basis with the expectation that a sufficient body of information will be obtained in the immediate future. Therefore, a suggested list of problems believed to be of high priority is presented here for consideration. Also, in order to identify the varied dimensions of these problems and the equally varied methodologies appropriate to these dimensions, a matrix is offered which conjoins examples of priority problems with methodologies appropriate to their analysis. It is hoped that such a priority list and a matrix of this kind will aid the profession in obtaining needed information by indicating the kinds needed and the methods for obtaining it. It is hoped also that such a list and matrix will encourage early attention and action to meet this need.

Definitions of Central Variables

If it is accepted that the music educator's concern is for musical behavior in the school milieu, then it follows that a priority listing of problems for research will consist of behavioral phenomena and related phenomena which are considered to be researchable. These problems, therefore, can be placed under general categories reflecting the mode of inquiry appropriate to them. These general categories include the constituents in Music Education.

As a prerequisite to such a categorization of problems in Music Education, it is necessary to define the central variables or constituents in Music Education. These are represented in the list and matrix which follow the definitions. They are considered to be central to the content of research in Music Education:

1. The Student. Any human experience can be thought of as involving one if not all of three components or domains -- the intellectual or cognitive, the emotional or affective, and the manipulative or psychomotor. To the person participating in an experience, it is ordinarily not possible to recognize and distinguish these three domains. Researchers or teachers, however, must design or manipulate the experiences of learners so that the emphasis or impact of one or more of these domains is apparent and enhanced. This is the essence of experimentation and teaching, namely, the control or manipulation of one or more dimensions while the effect of this manipulation on the behavior of the learner is observed and evaluated.

   To return to the explication of these three domains, the cognitive aspects of experience involve those elements which are based on knowledge of particular facts, concepts, and definitions; the understanding of interrelationships and principles; and the analysis and evaluation of experience. The affective domain in an experience involves the emotional impact of the event (satisfying or frustrating; supportive or threatening) on the participant or the emotion he contributes to it out of past experience. It is this domain which is least subject to external assessment and most valent in the overall response to an experience. The third domain is the psychomotor and involves the observable physical behavior of the participant. Psychomotor behavior can be arbitrarily classified in many ways, making possible examination of its various aspects. The function of the psychomotor elements in human behavior is relevant to the educational process for the learner in the making and learning of music and therefore a variable in that process.

2. The Teaching-Learning Process. The educational process in institutionalized settings takes place as an interaction between the teacher and the learner. As the term "teaching-learning process" is used here, it refers to the activities engaged in by teachers to create change or bring about learning in students. The varieties of interaction in the teaching-learning process are variables in that process.

3. The Content of Instruction. The information and objects in experiences which are used by teachers in the teaching-learning process are identifiable variables. Their selection, organization, and sequencing are commonly referred to as curriculum.

4. The Teacher. A basic variable or collection of variables in the teaching-learning process is the teacher. The variables which constitute the teacher are his personal and social characteristics, background, professional education, professional competencies, and professional behaviors in the interaction within the classroom.

5. The Constraining Factors. The teaching-learning process occurs in a particular situation which in itself has characteristics. These characteristics are, in part, constraints which delimit and guide teachers, students, and curricula as well as affect the efficiency of the interactions between teachers and students. They include such variables as the socio-economic setting of the school, the school's physical plant and equipment, the financial base of the school, the school system, and administrative philosophy and practice. These variables are almost innumerable and some are extremely subtle.

Priority Problems for Research

The problems listed in the categories which follow are considered to be concerns of high priority in that they are recurrent in the work of the music educator and remain basically unexplained phenomena. In addition, there are relationships between many of these phenomena and they are not discrete in character.

1. The Student
    a. Development of musical growth gradient characteristics.
    b. Nature and nurture of musical talent, aptitude, ability, and intelligence.
    c. Effect of music deprivation or saturation on music learning, values, and attitudes.
    d. Identification and development of creativity.
2. The Teaching-Learning Process
    a. Development and application of a systems approach to the teaching and learning of music.
    b. Means by which awareness of the symbolic systems of music is transformed to conceptual understanding.
    c. Development and integration of musical understanding in the rehearsal of performing groups and other ensembles.
    d. Development of instructional models.

3. The Content of Instruction
    a. Development of objective criteria as a basis for value judgments of music performance.
    b. Development of objective criteria as a basis for value judgments concerning the worth of music compositions.
    c. Scope, sequence, and appropriateness of curricular materials in musical learning.

4. The Teacher
    a. Relationship of music teacher preparation to professional function.
    b. Characteristics of prospective music teachers and successful music teachers.
    c. Roles of the music teacher.
    d. Attitudes and interests of the music teacher.
        1) Concepts of success and achievements
        2) Professional satisfactions
        3) Self-image
        4) Musical and nonmusical interests and value systems.
    e. Professional competencies: skills, knowledges, and understandings in music and in relevant nonmusical areas.

5. Constraining Factors
    a. Plurality of tastes.
    b. Interrelationships: music, education, and other disciplines.
    c. Function of mass media in music instruction.
    d. Development of basic criteria and techniques for evaluating music programs in American schools.
    e. Clarification of terminology applied to all levels of music teaching.
    f. Changing role of Music Education inssociety.
    g. Perception of Music Education by the general public.
    h. Place of Music Education in the power structure of the schools.
    i. Historical aspects and influences on Music Education: instructional practice, programs, persons, organizations, institutions, equipment, and materials.

A Matrix for Research

The following matrix places each of the problems in Music Education suggested above at a focal point. This focal point is a conjunction of the nature of a problem and its appropriate methodology. The methodologies typically used in educational research are used also in the matrix. These are Descriptive (empirical), Experimental, Historical, and Philosophical. The categories of problems are those used previously in the section "Priority Problems for Research." Given the five categories of research and the four methods of inquiry, the matrix appears in a two-way table below. For purposes of clarity, examples of specific problems based on the "priority problems" are presented after the matrix.

SUGGESTED PROBLEMS FOR RESEARCH: CONTENT AND METHOD[1]

Categories of Problems	Descriptive	Experimental	Historical	Philosophical
I. The Learner:				
affective	Problem 1	Problem 2	Problem 3	Problem 4
cognitive	Problem 5	Problem 6	Problem 7	Problem 8
psychomotor	Problem 9	Problem 10	Problem 11	Problem 12
II. The Teacher	Problem 13	Problem 14	Problem 15	Problem 16
III. Teaching-Learning Process	Problem 17	Problem 18	Problem 19	Problem 20
IV. Content of Instruction	Problem 21	Problem 22	Problem 23	Problem 24
V. Constraining Factors	Problem 25	Problem 26	Problem 27	Problem 28

[1] See the following list of problems for those included in the Matrix as examples.

Examples of Problems

Problem 1	An analysis of musical responsiveness in fourth grade students who have been taught by means of the Kodaly method of instruction.
Problem 2	The mood of kindergarten children before and after musical experiences using the Orff instruments.
Problem 3	The meaning of music in terms of Plato's Doctrine of the Ethos and school music practice in the United States, 1850-1950.
Problem 4	An analysis of the philosophical foundations for creative musical behavior theories and practices of Emma Sheehy.
Problem 5	The knowledge of musical form in sixth grade children.
Problem 6	The effect of music theory instruction on high school vocal students' ability to read music.
Problem 7	A historical analysis of objectives in the cognitive domain for music instruction.
Problem 8	Philosophical constructs for Music Education in an academic discipline.
Problem 9	The evaluation of physical rhythmic patterns in children K-6.
Problem 10	A comparison of the music reading achievement of second grade students using multiple motor activity with the achievement of students using passive experience.
Problem 11	A comparative analysis of programs incorporating physical activities in music learning at the second grade level during the 1920's and the 1960's.
Problem 12	The principles of the Montessori method applied to the objectives of Music Education.
Problem 13	A comparative behavioral case study of selected junior high school music teachers in the general music class and the performance group rehearsal.
Problem 14	Teacher response to an abnormal student behavior stimulus in the performance group rehearsal.
Problem 15	Expected music teacher competencies as revealed in certification requirements for the period 1930-1960.

Problem 16 Implications for music teacher education derived from the educational theories of Harry S. Broudy compared with those of McMurray.

Problem 17 An analysis of music teacher classroom behavior using a modified Flanders interaction analysis technique.

Problem 18 A comparative study of rhythmic development in students educated by the Kodaly method and by a traditional method.

Problem 19 A historical analysis of the psychological bases for student physical involvement in the music learning process.

Problem 20 A philosophy of music instruction based on the theories of Jerome S. Bruner.

Problem 21 An analysis of the music included in elementary school music series published since 1960.

Problem 22 The efficacy of folk songs versus graded exercises in the teaching of music symbolization to fifth grade students.

Problem 23 The function of song materials in the techniques of instruction implied and explicated in the writings of Lowell Mason.

Problem 24 Implications of a systems approach to Music Education for the development of individual creativity in musical arts.

Problem 25 The influence of public opinion on the construction of a school music curriculum in a small midwestern city.

Problem 26 A comparative analysis of the functional adaptation of selected secondary school music programs with their withdrawal from participation in contests and/or competitive festivals.

Problem 27 The role of the supervisor of music in large city school systems during the 1920's.

Problem 28 An analysis of philosophies of Music Education in terms of their expression and practice by high school instrumental music teachers.

Conclusion

The purpose of this chapter has been to indicate areas of needed research. An effort has been made (1) to define the constituents or categories of problems in Music Education, (2) to list some problems in these categories, and (3) to indicate methodologies appropriate to them by suggesting examples of problems in a category requiring a general type of research methodology. These various efforts were conjoined in a matrix.

DEVELOPING RESEARCHERS IN MUSIC EDUCATION

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Graduate programs in Music Education have been in operation since the 1930's. These programs have been structured to prepare music educators for a variety of existing roles in the Music Education enterprise. Such roles have included those of music teacher in elementary and secondary schools, conductor of performing groups in public schools and colleges, college teacher of music and Music Education courses in the teacher preparation program, college supervisor of student teaching in music, supervisor of music in the public schools, and music administrator in public schools and colleges.

Another objective of many graduate programs in Music Education has been to develop an orientation toward research and basic research skills. Many master's degree programs and most doctor's degree programs culminate in a paper, thesis, or dissertation. The most remarkable characteristic of these efforts is the startling range in degree of research competence which they exhibit.

As in most other subject matter areas, graduate programs in Music Education have operated on the assumption that the Ph.D. and, to a lesser extent, the Ed.D. represent research degrees and that the recipient of such a degree is qualified as a researcher. However laudable the intent of this assumption may be, the fact is that most graduate programs in Music Education have been frankly oriented toward preparation for teaching, performance, and service roles and have placed only a minor emphasis on preparation for the role of the researcher. The fact that the doctoral dissertation is typically the last research produced by the doctoral graduate in Music Education gives testimony to the ineffectiveness of the program for the preparation of researchers.

Examination of the structure, function, and preparation of the Music Education faculties in even major universities gives further evidence of the small emphasis given to research. With few exceptions, professors of Music Education have full schedules which require them to operate in a variety of roles; only rarely is the research role included as a principal responsibility. In addition, many of these faculty members are products of programs which have not fully understood the unique problems and processes in the education and support of researchers.

With the recent availability of funds for the support of research, this situation has changed in some instances, at least theoretically and on the surface. In most cases, however, the teaching load of the professor who has been awarded a research grant is not actually reduced in proportion to the percentage of his time specified for the project in the funded project contract. Thus, for most researchers in Music Education, research remains an ancillary, not a primary, responsibility.

It is evident that a research explosion of an unprecedented proportion in all fields of education has already begun and will continue indefinitely as a matter of public policy. The demand for research and the availability of funds for the support of research have already resulted in a growing demand for qualified researchers in Music Education -- a demand which is not being met by graduate programs. The time has come to undertake specific programs for the preparation of researchers in Music Education.

It is the view of this committee that universities with the requisite resources in Music Education and related disciplines should, over a period of time, expand their graduate programs in Music Education to include the preparation of selected students for a broad range of research roles in Music Education. The types of roles which need to be developed are:

1. Researchers who conduct basic humanistic and scientific inquiry as, for example, in aesthetic theory and the psychology of music as these apply to Music Education.
2. Researchers who investigate educationally-oriented problems such as sequence in musical learning, expansion of the repertoire, and the history of Music Education.
3. Development specialists who investigate operational problems in Music Education.
4. Development specialists who engineer programs and packages of instructional materials for use in Music Education.
5. Measurement specialists who test and evaluate programs of Music Education and solutions to problems of Music Education.

For the next few years, however, effort should be concentrated on preparing music educators who are qualified to fill the dual role of the researcher on educationally-oriented problems (No. 2 above) and the teacher of researchers.

Recruitment and Selection

The early identification of promising researchers is essential. Undergraduates should be made aware of the careers available in research in Music Education, and those who appear to be capable of pursuing such careers should be encouraged as early as possible. The requirements for the master's degree and, insofar as possible, for the bachelor's degree should be tailored to the career plans of the prospective researcher. The program should provide as much flexibility as possible.

Although many of the roles to be filled by researchers in Music Education require the traditional background in Music Education, there are also roles for pure researchers who lack this background and for whom, in fact, the traditional background could conceivably be a liability. Thus, persons to fill these roles may be sought from among students with an early background and a continuing interest in music who are enrolled in liberal arts programs with majors in music, psychology, sociology, physics, and other scientific and humanistic disciplines.

Basic researchers may be recruited during the junior or senior years of undergraduate education or, at the very latest, at the beginning of the master's program. Such an approach might be more satisfactory than requiring of music students additional work in the related scientific disciplines. In as much as Music Education faculties at the present time have little access to such students, new means must be devised to reach these students and acquaint them with the opportunities open to them.

The potential researcher in Music Education must be intelligent, imaginative, and creative. The institution must provide an environment in which his capabilities may develop freely and with a minimum of outside interference. It is important that at least one prominent faculty member, preferably the student's major advisor, be functioning in the role or roles for which the student is preparing in order that he may have a model with which to identify. Adequate financial aid must be made available in the form of assistantships, fellowships, and non-service grants from institutional sources as well as various types of support through funded projects.

Preparation of Research Specialists

The rapidly increasing complexity of educational problems and developments requires that departments of Music Education give immediate attention to the development of programs for the preparation of research specialists. Both undergraduate and graduate education will be affected because potential research specialists need to be identified as early as possible and directed into areas of study basic to creative research efforts. Although research training is now given by most institutions preparing music educators, such training is usually not as thorough nor of the kind it should be to meet demands already upon us. Typically, present programs are designed to provide omnibus preparation for the responsibilities normally undertaken by music educators.

The research specialist in Music Education is now needed to direct graduate programs in music education, to teach the needed courses in research techniques, to direct student research including the preparation of theses and dissertations, and to conduct needed researches, either on an individual basis or as the director of projects by funds from governmental or other sources.

The program for the preparation of researchers must be characterized by flexibility according to the previous background of the student. While a significant portion of the first two years of graduate study (that is, the master's degree program and the first year of doctoral study) may ordinarily be devoted to studies in music including performance, history, and theory and studies in professional education, as much as half of the student's time may be devoted to work especially designed to develop his research competence. These studies should include such courses as anthropology, ethnomusicology, musicology, philosophy, physiology, sociology, and psychology and the research techniques appropriate to these disciplines. In addition, there should be included, where appropriate, general studies in bibliographic techniques, statistical techniques, research design and methodology, and computer programming.

The educational program of the researcher in Music Education must be considered fluid and personally designed. The objective for the program, particularly at the doctoral level, may be considered best as specifically oriented, i.e., designed to educate the student professional competencies. With the burgeoning activity in education which is producing numerous kinds of specialists, a single set of criteria and a single form of curricular experiences cannot be projected realistically. There is the danger of narrow concepts and limited viewpoints. On the other hand, there are broad, traditional experiences that should be reevaluated for their value in educating a doctor in Music Education as a researcher with a specialization. Many of these specializations will have interdisciplinary characteristics requiring a program planned in a cooperative manner. The objective is the improvement of quality as a means for producing persons better qualified to examine particular problems. Perhaps the central consideration in curricular programs should be the relevance of educational experiences to the desired research competencies.

It would seem evident that where early identification of that rare combination of talent, intelligence, and interest can be made, the profession should encourage a career in research. Toward that end, a broad base in a variety of knowledges and skills is recommended. This may well begin in the high school years, rare though it may be. More likely, early identification will be made in the college years, where the prospective researcher can be encouraged to experience philosophy, mathematics, languages, history, biology, and the several social sciences in addition to music. This broad base is encouraged because the numerous possibilities in research will require various combinations of knowledges and skills.

The direct education of the researcher at the graduate level may require innovations in graduate Music Education. Again, the kind of researcher is the criterion for a specific program. For example, a specialist in comparative Music Education may seek language competence in Oriental languages; a specialist in urban Music Education social problems may forego language skills and seek knowledges in criminal sociology and the appropriate research methodologies; and a specialist in curricular materials may seek a thorough experience in computerized, programmed instruction. As early as possible in his program, the student should begin to engage in practical research, both in seminars and in on-going research projects. Because there is evidence that course work alone does not produce researchers, involving students in a research environment is essential. Upon completion of these basic experiences, provision should be made for specialization in areas of research consistent with the interests of the student and the resources of the institution. The areas of specialization should be included in the gamut of experimental, descriptive, historical, and philosophical inquiry. Finally, the student should design and carry out a research project of his own and present his report as his doctoral dissertation.

Because few, if any, music educators presently possess the education described above, attention needs to be given to the in-service education of graduate faculties. Furthermore, Music Education departments for some years to come should continue to draw upon the resources of other departments in order to implement the research training program. Musicologists, physiologists, psychologists, sociologists, ethnomusicologists, systems engineers, program planners, and computer programmers -- all such specialists will be needed to conduct in-service seminars for faculty members and to give instruction to Music Education students until music educators can be prepared as suggested. In addition, universities and colleges should encourage a distinction in faculty publications between research and speculation, valuable as the latter may be. Without this encouragement and the complementary in-service education, improvement in research output by the existing faculty in Music Education does not seem probable.

Preparation of Consumers of Research

Every graduate student in Music Education should have the competence to read and evaluate research of many kinds. To this end, it is recommended that each student be required to pursue course work leading to a basic understanding of logic and historical, descriptive, and experimental methods of research. It is further recommended that all doctoral candidates in Music Education, regardless of the role for which they are preparing, be required to gain competence in the elements of research design and the use of parametric and nonparametric statistical techniques. As a means toward achieving these understandings and competencies, miniature research projects utilizing these methodologies and techniques should be included in the courses of study required for the consumer of research. It is evident that the development of new knowledge would be futile indeed without sophisticated consumers of that knowledge because the consumers are the users of knowledge and revisers of practice.

FACILITATION OF RESEARCH PROGRAMS IN MUSIC EDUCATION

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Music is a form of human behavior, unique and powerful in its influence. It is not only an art, but a social phenomenon, and can therefore be investigated by any of several means depending upon the aspect under consideration. The key person in the study of the teaching-learning process in music is the Music Educator. In the present day, more and more of the responsibility for the genesis and facilitation of research rests on his shoulders. This chapter will devote itself to suggestions as to how the music educator, particularly at the university level, may fulfill this professional responsibility.

Establishment of a Climate for Research

A primary concern in the facilitation of Music Education research programs is the establishment and maintenance of a climate which is favorable and sympathetic to the growth of such programs. There is abundant evidence that the time is propitious for the vigorous encouragement of research in Music Education. A few examples of this burgeoning interest will suffice.

1) The circulation of the *Journal of Research in Music Education* has grown from 350 to over 9,000 since it was established in 1953.

2) Research committees, in addition to the Research Council of the Music Educators National Conference, have been established in such national organizations as The American School Band Directors Association, The College Band Directors National Association, and The National Association for Musical Therapy.

3) New publications devoted to disseminating the results of Music Education research have been established, with state support, in Missouri,[1] Illinois,[2] and Colorado.[3]

4) Greatly increased interest in, and attendance at, the research sessions at recent state, division, and national conventions of the Music Educators National Conference and its associated organizations has been noted.

These are encouraging signs of the increased importance attached to research, but this represents only a beginning. Major roles in the further improvement of the climate for research in Music Education are played by the university, by professional organizations, and by the Federal Government.

The University

The head of the Music Education department in the university must provide a model for his staff and the students in his department. He must be, or provide for, the motivating force in improving teaching methods and materials through utilization of the results of competent research. He must be the energizer. It is principally through his example, through the policies he establishes and carries out, through his own informed efforts and his own involvement in research activities, that others will be inspired to move forward. The expansion of facilities, improvement of library holdings in Music Education, the addition of equipment and laboratory space, the improvement of the efficiency of teaching methods, are all important responsibilities of the department head. But it is not enough merely to incorporate competent research information into the decision-making which affect these improvements; the students, undergraduates especially, must be made aware that research findings are being utilized and that a high value is attached to these findings.

The unique educational environment of the individual university must also be carefully considered and those factors cultivated which have the greatest potential for improving the climate for research. For example, there may be a particular department which is sympathetic to research activity, or a member of another department who is interested in music who can lend active and informed support. Joint appointments may be extended to teachers of research courses in other departments. There may be particularly strong ties to the local school system, or perhaps that of an adjacent community, thus providing a sympathetic and cooperative situation for carrying out research projects. It will always be a better situation, however, when a member of the Music Education staff is a thoroughly competent researcher.

Professional Organizations

Much can be accomplished by the various professional organizations, at all levels, to improve the attitudes toward research. Several examples of the improved status of research can be found, but there is still much to be accomplished. Every professional organization should have an active research section under the guidance of an interested and qualified chairman. The conferences and conventions of these organizations provide highly desirable opportunities for further emphasizing the importance of research activities. The inclusion of reports of competent research in their respective publications is highly recommended.

Individual music educators who have some understanding of research should become active members in such groups as the American Educational Research Association, National Society for Programed Instruction, etc., and subscribe to the publications of these groups.

In any event, these important publications should be available in the school resource libraries.

A possibility for the promotion of interest in research that may be overlooked is the student chapter of the Music Educators National Convention in the individual teacher-training institutions. Here programs may be devoted to a discussion of a particularly relevant report published in the Journal of Research in Music Education with possible further commentary by a practicing public school music teacher. A program may be devoted to a lecture-demonstration by a member of the psychology or the education department, or it may be possible to obtain a guest speaker from an industry related to the profession. The student Music Educators National Conference chapter sponsor has a special responsibility to fulfill in planning programs that are stimulating and provocative from the standpoint of research activities. Many times these programs can fulfill a special function in helping to identify those undergraduates who are especially interested in and qualified for later graduate research training.

Federal Government

The increasing involvement in and support of the arts by the Federal Government, and specifically, support for research projects in the arts as well as in education, should be viewed as an encouraging development which should further enhance the climate for research in Music Education. The appointment of a Music Education Specialist in the U.S. Office of Education in 1961 was an important development for the profession and provides further evidence of the ever-increasing awareness of the Federal Government of the importance of music in our national life. But it must be emphasized again that a key role in the development of research must be played by the practicing music educator. He must exert himself to identify properly the projects that need and deserve support for researching.

Organizational and Administrative Factors

A research program is built on ideas which result from an attitude of ever-increasing curiosity. To what extent these ideas lead to new or refined knowledge is dependent, to a greater or lesser extent, on persons other than the initiator of the idea and conditions which affect the research process.

The importance of the Music Education department as a focal point for producing research at the university level requires a climate which stimulates and fosters the department's research interest. Without question, the primary energizer of such research programs at the university level is the head of the Music Education department. But it is the dean or chief administrative officer who must give every encouragement to the music educator to carry on research. Recognition by the chief administrator of the need for such programs in terms of benefits to his instructional staff and to the profession at large as well as his active support in policy and administrative matters are prime requisites. This officer should be engaged in research, or at least should have had meaningful experience in research, and his work must at all times serve as a model to his faculty and his profession. The same characteristics are of paramount importance in the Music Education department chairman.

Administrative policies which encourage and give status to the research interests and activities of the faculty facilitate the work of the researcher. The importance and value of research is highlighted when faculty members are assigned time for research as part of their regular responsibilities. Research usually will not result if it is considered as extra work, or the individual's professional responsibility, on his own time. A body of professional knowledge rarely accrues under such conditions. Allowances of time for research endeavor is essential if a research program is to develop. The practice followed by science departments of assigning staff time for research should be adopted in Music Education. Of course, the identification and development of the various strengths of individual faculty members must be realistically ascertained.

It is questionable today whether any one man can have all the knowledges necessary for dealing with all of the aspects of a complex research problem. In order to clarify problems, to refine them, and to determine appropriate designs, the researcher may need to be dependent on the capabilities of others.

A practice which has proved to be effective in some institutions is the formation of a multi-disciplinary, advisory committee, which thoroughly reviews all research proposals. The advisory group identifies misconceptions in thinking and design which many times have gone unnoticed by the researcher preparing the report. Committee responses provide refinements and insights which bring about greater clarity and clearer focus of purpose. Reviews of this kind provide a "dry run" for those proposals which are to be submitted to funding agencies using the "reaction" committee technique as the decision device. The same conditions should obtain for non-funded proposals.

A research bureau, foundation, or other administrative agency in the university should be utilized by the Music Education department in facilitating the initiation and execution of a funded project. Such an agency will assist an investigation in identifying appropriate sources of funds for his kind of project. It also will assume much of the contractual, clerical, and bookkeeping tasks necessary in any funded project. This assistance frees the researcher for research and helps him deal with contractual and funding problems more adequately.

Legal agencies for public education, such as state and city departments of education, also can facilitate the development of research programs in Music Education. Cooperative working agreements should be arranged by the music educator. The music supervisor, particularly if interested and trained in research, is an excellent person to involve in cooperative research endeavors. This professional worker is aware of current and constant problems and brings a "field" viewpoint to the research planning. His perspective is of immense importance in the selection of student groups, materials, and procedures to be followed in the execution of a project in the schools. Public educational agencies such as the school also offer opportunities for field testing of instructional models and materials. They provide the laboratory for much of the research activity in Music Education.

The cooperative involvement of these groups facilitates the development of a research program because many functional problems of immediate concern can be investigated; additional assistance in personnel and equipment may be made available; and opportunities for observation and minor participation involvement of student researchers are numerous. At the same time, some of the research needs of the schools are being met, and new interest and status may be engendered.

Public schools today are probably more interested in research activity than at any other time in the history of American education. The influence of our culture and the availability of research funds have created a new climate for cooperative research endeavors between schools and the university. Music Education departments must realize that this situation exists and that it provides many opportunities for the facilitation of research programs. Through this cooperative process, the whole of Music Education may gain knowledge and more effectively contribute to the schools.

Induction, Integration, and Function at the Public School Level

The focal point, climate, and incubation period for research has been indicated to be the responsibility of Music Education departments in colleges and universities. This further assumes the pursuance of research by at least one of the staff members, and provisions for physical facilities, laboratory items, and administrative approval. Now the actual carrying on of the research is at hand. Ways, means, and procedural sequence are known. Frequently it is at this point that the research loses its effectiveness and utility. There are a number of factors that may contribute to this, but let us consider only three and how they might be avoided.

1) Too often secrecy dooms the research and its application from the beginning. It is nearly always good procedure, either at a regular or special staff meeting, to apprise the staff of the proposed research. Each member should be provided with an abstract which shows the nature, procedure, and possible application of the research. Many projects are hampered, not by poor planning, but by the adverse human dynamics involved. Many valuable suggestions can be given to the researcher by other staff members. Methods teachers, as student teaching supervisors, are often the liaison agents between university and school. They must have enthusiasm for research if they are to implement research findings in the school.

2) The lack of student awareness of the research restricts the value of the research activity. Unless a "single-" or "double-blind" method is being used, advanced undergraduate Music Education students should be apprised of the proposed research. This awareness helps to create student interest in research, and promotes prestige and confidence in the department and the researcher.

3) Lack of student involvement also minimizes the effectiveness of the research. Trial runs, pilot studies, and item analyses can involve underclassmen before the project proper is attempted. Thus, students and staff members jointly become involved in research endeavor. There are a number of very beneficial side effects from such group procedure which makes the best of group dynamics.

For example, assume that a study is to be carried on in a school or schools apart from the university by a professor of Music Education. Here human interaction becomes vital. The superintendent should always be involved or consulted beforehand. It will often help to have the dean of education or an education professor accompany the researcher on the initial visit. The head of the Music Education department should be involved if the supervisor of music in the school system is to participate in the project. In nearly all cases the assistance of the local music educator (band director, choral director, or elementary music supervisor) must be enlisted. It is essential to provide a carefully prepared abstract to any or all of these individuals. There then must be an interchange of ideas that will result in the participating teacher's becoming a most important person of the research team. He must be brought to a full membership in the research project. Generally, he will take pride in helping, and the prestige of his program as well as that of the Music Education department of the university probably will be enhanced.

Without appearing to be superior, the researcher should utilize all possible means to strengthen the knowledges of the school music educator with regard to the research process. He should do everything reasonable to assist the music teacher in developing enthusiasm for research. He also should inquire whether the music teacher has any research problems of particular interest and, if so, to assist him in implementing the research suggested. The music teacher may be a major progenitor of that research. It is the responsibility of the university researcher to assist him in any way possible, lend him equipment if at all feasible, offer assistance with statistical procedures, and so forth. It must be apparent that expertness in human dynamics and service are the keys to the induction, integration, and function of research at the public school level.

The temptation to speak of research procedure has been resisted because the problem is not primarily one of procedures, e.g., controls, sampling, converting the qualitative to the quantitative or preferable statistical procedures. These are only means. The task is one of engendering an enthusiasm for new knowledge and, perhaps, new ways of getting that knowledge.

Something should be said about the nature of the projected research. A project should be chosen that is certain, either negatively or positively, to provide information on a specific problem in the teaching and learning of music. The practicality of a research problem must be obvious to the school personnel for effective utilization of the research results.

After the research is completed, all credit due the public or private school must be given generously with direct reference to the persons involved. It was their school, their pupils, which made possible the research.

When all of the foregoing conditions, dynamics, and results of the research have been achieved, there are other results and influences which, in most cases, are of even greater importance. Of primary value is the generation of the idea for the research project.

The generation of an idea for research is an education in itself. The problem must develop or progress from an amorphous to a concise form. Pertinent literature must be reviewed because all good research relies on adequate bibliography. Practicality must be considered. This often forces the university professor to visit many elementary and secondary schools, a healthy exercise. Finally, there is the reinforcing but anxiety-generating thought of publication. Unless the results of an investigation are communicated, they are of little value.

The involvement of the Music Education staff in research discussions, if done well, brings a positive group cohesiveness. It stimulates generative thinking in each individual on the staff. When a researcher becomes a member of a staff where no research has been done, there soon will be others of that staff doing research, thinking creatively, and reading widely. Of equal importance is the transformation which takes place in Music Education students. It will not be long before many students will be seeking opportunities to do research. The erroneous notion of conflict between science and art will begin to evaporate. Students will come to think of research as an integral part of Music Education. They will prepare for it and take the concept with them into the field when they graduate.

Research induction may bring higher education and public school education closer together. Both may feel much more a part of the same process and will understand the other's problems better. The music supervisor perhaps will become interested in research, but of even greater importance will be the generation of a true understanding of art and science in the pupils.

Research Agencies

Agencies outside the immediate educational setting, such as industrial groups, private foundations, and the Federal Government, offer varied resources for the development of research and research programs including the development of research skills on the part of faculty members. Music educators in the past have not fully realized the potential for support from industrial, private, and governmental agencies.

The music industry for many years has provided some laboratory equipment and materials which could be used in instructional programs in research. Musical instrument companies have provided films and equipment on loan for such purposes. Engineering consultants are often available for demonstration and lectures. These resources can be used to good advantage in developing the research program.

The music industry, up to now, has not financially supported, to any great extent, research projects not directly related to their own immediate interests. This may be due in part to the seemingly disinterested attitude of many music educators in projects of a research type. It also may be due to the lack of a commercial advantage arising from a specific project proposal. Industry is a source which music educators have not tapped. It supports research and development in other educational areas; it undoubtedly would support research in Music Education more fully if competent researchers provided new knowledge with a commercial appeal, or if it were fully demonstrated that there would be long term benefits accruing from research of a basic type.

Many private foundations exist which provide funds for various research and development projects in music and Music Education. A listing of such private foundations is provided by the Russell Sage Foundation[4]. Many times foundations have not identified specific problems for research; they need ideas, advice, and informed guidance from the Music Education profession. Here also, the music educator must make his critical interests and needs known. The Music Educators Research Council is currently planning to provide foundations with information of this type. However, through direct contact, the music educator can often obtain funds for unique or needed research. Private foundations are yet another source of support which to this date have been scarcely tapped by the Music Education profession.

The U.S. Office of Education (USOE) Cooperative Research Branch has been actively supporting research in Music Education since 1958. Federal programs for support of research and development activities in public schools and universities have been expanded in each succeeding fiscal year. Research training programs and post-doctoral fellowship programs are available for the training of researchers. The Federal Government has been an important factor in the development of research programs in Music Education. Music educators must acquaint themselves with the programs available through the U.S. Office of Education and utilize these in the promotion of their individual research and the goals of the profession.

In conclusion, there are many sources of financial support and advice for the competent researcher who knows his goals, knows how to attain them, and knows whom the research findings will benefit.

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THE UTILIZATION OF MUSIC EDUCATION RESEARCH

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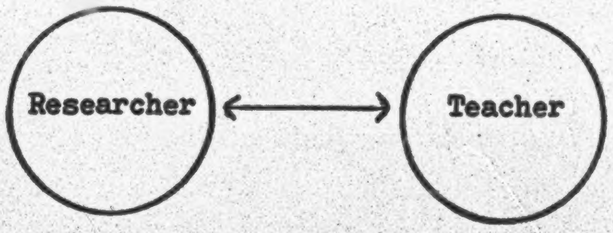
University of Indiana

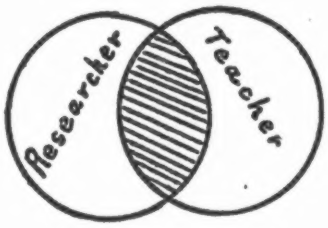
To the field of Music Education, the ultimate value in research is realized when it is successfully applied to some element of the teaching-learning process. This event occurs too seldom, however, for a variety of reasons. It may be partially due to the fact that school music has been strongly based upon musical performance and upon teaching techniques which have been handed down through several generations of teachers and pupils. It may be partially due to the fact that the music educator is suspicious of research which for the most part has been done as a requirement for a graduate degree by individuals whose techniques at best were unrefined and whose sample was seldom adequate. The music teacher is rightfully reluctant to use research that has not been replicated or field tested.

There was a popular belief a few years ago that the time lag between research and its implementation in the public schools was roughly a generation -- the implication being that dissemination of research was so inadequate that this phenomenon was unavoidable. Such an assumption is untenable today. With the advent of Long Distance Xerography, Microfiche, and other retrieval systems, many research findings become common knowledge before the primary research has been field tested, replicated, or evaluated by an impartial jury. Indeed, when a normative survey revealed a decline in Music Education enrollments in the public schools of California, members of the profession were generally aware of this trend even before it could be verified.

The lack of a large body of research in the field of Music Education and the tendency to overlook useful findings from related fields only compound the problem. However, the primary reason research findings in Music Education have been so modest in their influence upon educational practice lies in the way in which the knowledge obtained through research is customarily utilized. Here, according to H. M. Brickell;[1] there are two opposing beliefs. Each belief leads to a dissemination strategy quite different from the other.

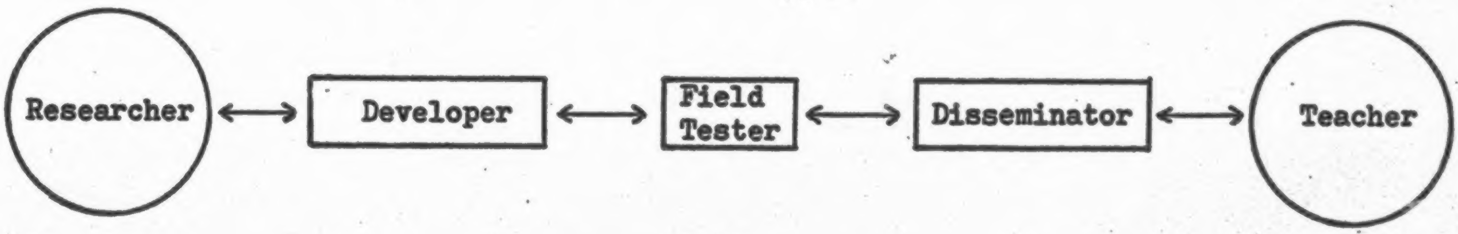


The first attitude, illustrated above, is that the distance between researcher and teacher[2] is short and could be eliminated entirely by bringing the two face to face. This belief would support the proposal that researchers should take an interest in practical classroom problems and that teachers should learn to respect the contributions of researchers. An extension of this attitude would be expressed in the belief that the researcher-teacher gap may be totally eliminated by having teachers act as their own researchers. This concept, illustrated below, leads to proposals for action research.



The impact of this kind of research may be felt directly and immediately. In other instances, the effect may be more subtle though equally resilient. As a case in point, empirical research has shown that perceptual abilities which may contribute to aesthetic experiences are largely learned rather than innate and that change in perceptual capacity can be induced through training. The goals of Music Education, consequently, are moving away from functional ends, and growing attention is being given to the apprehension of inherent values of music as they relate to human experience. Thus, research initiated in the classroom has generated philosophical inquiry which in turn has gradually permeated the teaching-learning situation to effect change in the educational process.

On the other hand, there are those whose experiences in education, medicine, and industry tend to support the proposition that the gap between researchers and practitioners is large and that researchers and practitioners in any field tend to act more and more like themselves rather than more like each other. It is believed that the gap can best be filled by others who mold the product of the researchers into a form usable by the practitioners, as illustrated below. These men are the inventors, the textbook writers, the curriculum developers, film makers, teaching machine designers, and so on.



Because a plan for the dissemination of research findings is indeed dependent upon which of these two concepts is followed, the rationale underlying these attitudes appears worthy of further consideration. First, research-based knowledge can be transmitted in its original language only to those who can read that language and benefit from the information in the report. Unfortunately, the number of such people is quite small -- likely comprising that limited group who could have conducted the research themselves and an additional group so situated and so skilled that they can apply the research results in developing new forms of practice. Second, research-based knowledge can be translated into the proper language for a wide variety of audiences. That is, reports can be rewritten with the needs and background of a particular group in mind. The most important of these specialized groups are those who are developing new forms of practice and those who will actually practice the new behaviors once they are developed. A third and opposing attitude would be that research-based knowledge must be transformed into useful practice.

To be more explicit, research knowledge should be used to create, invent, or design new ways to do things. If research findings are translated into the language of designers, textbook manufacturers, and teachers of methods classes, these persons can then transform these findings into programs useful in the classroom. Thus, the thing to be disseminated to music educators is not research-based knowledge but rather new forms of practice derived from research which they can adopt or adapt. For example, an instrumental music teacher is far removed from the kinds of knowledges and operations required to generate the acoustical and metallurgical research which eventuates in a better musical instrument. He is dependent on the development as well as the distribution facilities of the manufacturer.

Research results must first be transformed into musical practice through the process we may call "development." This job is a specialized task. At present, few music educators have either the talent or the time to study these behaviors scientifically or to design new practice based upon research. They may not be expected to do so, but they should be aware of the problems for which research findings may be appropriate. Thus, research should be generated from the felt needs of the practitioners.

A great deal should be said about the complex process of development. Basic research into human learning as well as basic research into the actual nature of knowledge in the field of music ought certainly to precede any development effort. It could be pointed out that the development of instructional materials ought to be an iterative process during which each component of those materials is designed and written, then tested with pupils, with the results fed back to the writers, who then rewrite and retest the material, with the whole process being repeated until that particular component is good enough to go into the package of materials. Then the package ought to be tested as a whole, probably on a small scale in pilot locations, and be modified again if necessary. A full-scale discussion of the development process would explain, incidentally, that this testing of pilot designs is a highly significant form of research, often called "applied research." And further discussion would explain that following small-scale testing for the purpose of redesign should come large-scale testing for the purpose of determining what the package (now completed and fixed into final form) will do in assorted field settings when placed in the hands of teachers. This evaluation is undertaken not for the purpose of improving the developed materials, but rather to determine who can teach what to whom. The results are not sent back to the designers at the drawing boards, but rather on to the disseminators to let them know where to send the materials and on out to the prospective adopters in the field to let them know whether to adopt the materials.

Thus, a good deal more attention must be paid to legitimate techniques of research development if the field of Music Education is to profit significantly. A new finding needs to be thoughtfully related to the objectives of the music program, transformed into a sequence of activities and musical literature appropriate to the particular grade level, supplemented by any recordings or instruments prescribed to fit instructional needs, and explained in terms of clear and concise directions for the teacher. New approaches which have aroused interest and acceptance throughout the United States have nearly all begun in this way.

The role of the commercial motive is often overlooked. Music and book publishers, instrument and equipment manufacturers, and local music companies have long been powerful agents in the development and marketing of new ideas. In earlier times almost any attractive innovation was likely to secure attention if properly promoted, but increasing competition generally insures that serious investment will be made only in song books, teaching methods, and equipment which really work better -- that is, they are based upon relevant research and proper development technique. Nonetheless, reasonable caution must still be exercised by music educators, because the process of research development and dissemination is all too often captured by opportunists. Their activity produces various fads and gadgets which may achieve wide circulation, but which finally result in professional confusion.

The final steps in the utilization of research are dissemination and adoption. Fortunately, there are several ready-made avenues. Music teachers are notoriously active and energetic, and most are regular clinic-goers. The commerical agencies and guest clinicians can be trusted to give a promising idea good exposure. Such exposure is often shallow, however, and it is rather common to see music teachers go home bursting with new ideas which are soon abandoned because of lack of sufficient understanding and training in their use, or because the local school administration did not have the advantage of the same direct demonstration at the clinic.

This suggests that much more use should be made of audio-visual aids such as movies and recordings and programmed materials. Even more effective would be the wider use of music specialists who would travel from school to school to demonstrate and train other teachers in their own communities in the use of the new materials and techniques. This effort, traditionally the task of music supervisors supplemented by college music teachers and music company representatives, could be greatly expanded by the use of especially successful public school teachers traveling to nearby schools. This plan would provide additional status for the demonstrating teacher and a more believable model.

To help create the proper atmosphere for the adoption of a program in the music classroom, the following points should be considered:

1) The new idea must be identifiable, describable, and reproducible. Unless it is reduced to a behavior which the adopter can learn, it can not successfully be imported.
2) The public must not be aroused to opposition.
3) If the new process can not be used by one teacher in his own classroom, but demands new behaviors or arrangements among several teachers, administrative endorsement is essential.
4) Teachers should be informed of both the traditional and the novel elements incorporated in the new approach; the novel arouses their interest and the traditional allays their suspicions.
5) Endorsement should be sought from professional groups and leaders.
6) Pertinent information should be provided as the need arises.
7) The demonstration setting should be natural.
8) Any fears about adverse results should be dispelled and any prohibitive regulations need to be removed or suspended in advance.

9) Physical facilities and time schedules may need to be modified.

10) Staff training must be provided as required.

Conclusion

This paper is intended to make one major point: most reports of research findings cannot simply be mailed out to public school music teachers with the expectations that those findings will be used. Research results must first be transformed into usable practice through the process we have called "development." And even after that, the dissemination of these new forms of practice into elementary and secondary schools is a massive job -- expensive, complex, and long.

Within the Music Education profession a vigorous challenge has gone out which promises to bring about major transformations of the objectives, content, and methods for teaching music in the schools. Long established assumptions are being challenged and a degree of analytical clarity is emerging. Studious attention is being directed toward the identification of relevant behavioral problems as guidelines for teaching music which research, in its way, must explore. The utilization cycle will not be complete, however, until the mediators have transformed research findings into usable forms and the practicing musicians have adapted and adopted this knowledge into Music Education practice. An implication of the foregoing is that the Music Education profession must encourage those distinctive personnel who function within the research-into-teaching milieu.

Part III

THE CONFERENCE PAPERS

Preface

The papers and documents included in this section of the report were the basis for the Conference deliberations. Their presentation and the discussion of them comprised the work of the first four days of the Conference. They are presented here for the reader to consider and evaluate personally. It will be found that much of the content in Part II of this report was derived directly from these documents. However, there was much in the papers and the discussion of them which could not be incorporated in the Committee reports in Part II. The brief time allotted to the Committees obviated as thorough a treatment of their assigned topic as was appropriate. Rather than lose any of the content of the papers, they are presented here in their order of concern during the Conference.

INTRODUCTION TO THE CONFERENCE

Henry L. Cady
The Ohio State University

Before we become immersed in the work of this Conference, it seems not only appropriate but bindingly essential to consider the reasons why we have gathered here. It could be that we do not all have the same understandings of our purposes. Semantic confusion is certainly common among us. As will be seen during this week, the meaning of the term 'research' is a basic point of confusion. But this should not alarm us. The meaning of words lies in our experiences with them. What we say is not heard for what we intend it to mean because the listener has not had our experiences. That is why the first task of the Conference is definitional. It can be said with not a little justification that the definitional problem may be the basis for our ills in Music Education research.

Of course, there are always difficulties with folks who like to play that old Indian game of "Buffalo, Buffalo, who's got the discouragin' word?" This Conference itself is a positive act that will bring about wholesome changes. If we find the problems before us to be formidable, let us try to separate semantic difficulties from differences in belief. Where there are differences in beliefs, these can be accepted because beliefs arise out of assumptions and assumptions are what we live by.

May I insert here a discouraging word and then let us be done with it. There are two levels of political thought. One is within a group. The other is between a group and its externally related groups. I would like to submit to you that we are concerned here with only the former. We may all speak from our true beliefs and then, because we are charged to produce a set of guidelines or a "white paper" for our profession, we will compromise with one another. We will produce a consensus. But that consensus will then be a non-negotiable set of ideals for our externally related groups. Our purpose here is not the art of the pragmatically possible or assuring the probable. Our purpose is the definition of what ought to be -- the ideal as best we can understand it at this time in the history of music in the United States.

Now why is this an issue of importance? Why voice this issue at the outset? The answer is simple. None of us here can know when such a gathering will occur again. If there is one thought that has weighed upon me more than any other, it is the knowledge that I was planning what may well be a single opportunity for us. There is no organization capable of the freedom of exploration that we can enjoy here this week. Our Music Education Research Council is constrained, and rightly so, by a relationship to the professional organization which supports it. There are several here who are on that Council. You know that there is much work to do before a group of that kind is prepared to do what we will do this week. We have here a rare gathering of great talent, of eliteness. Some are here because they have a relatively youthful view of the world of Music Education and Research and have already made a mark. Some of you are here because you can give us the perspective of time, the wisdom of one who has had a lonely way of it because he has chosen research tools in the pursuit of truth and fact. To be very personal, I find courage in my own beliefs in the names of Morgan, Gaston and others. There are differences in these people but there is a common denominator -- the belief in a cause and awesome tenacity in the pursuit of fact to dispel the myth of opinion. For them, there is real meaning in Bacon's Ideals of the Mind and James' Canons of Proof.

There is an interesting history that brings us together. One sometimes wonders about the destiny of men. Immediately preceding this meeting there is the project Erwin Schneider kindly shared with me. In the early days of that project it was apparent that the word "research" meant almost anything Music Educators wanted to make it mean. Too, the term 'Music Education' was literally nonsense -- it meant nothing and included everything. An obvious next step was to bring together persons who could establish criteria for our people to use as guidelines.

Another bit of history is the peculiar gathering of people at a particular time and the catalysts which bring about change. One could say that William McBride was such a catalyst when he had the vision and understanding to bring two people together who would attempt a different approach to Music Education. This conjunction alone is an interesting event to ponder. Another such human catalyst is Harold Arberg, who meets a formidable responsibility well. Many of us in this room know firsthand how he brings together a multitude of factors to make events such as this possible.

But there are even more intriguing bits of history which reach further back in time. Let me quote some words of men who are not here but who belong here:

> It seems that the time has come when the National Conference should organize itself so as to centralize the values of all the research that is going on throughout the membership of the Conference....I find these different researches and studies are often limited in influences because they do not come before the National Body and are not taken into a coordinated and full supported scheme by the whole membership.[1]

This was said by Will Earhart in 1936. Even more critical of the state of knowledge in Music Education was Jacob Kwalwasser.

> We are told that the child's voice is high and light and we accept the characterization without its accuracy. We are told that the first contact with the score should involve only quarternotes, and again our faith in authority makes us incredibly gullible....I could continue indefinitely with fatuous claims made by those in authority supported not by fact but by faith. The truth or falsity of these positions for some unfortunate reason has not been established. But truth cannot be divined; truth cannot be guessed; truth can only be discovered....We must as a profession, acquire a problem-solving consideredness. We must realize that we are confronted with more problems that we can ever solve. We must show some irritability with the partial solutions now in effect. We must constantly seek better solutions. We must abandon our static concepts of education and realize

> we are living in an everchanging world. We must realize that variation is the invariable principle of our life. A solution that was acceptable fifty years ago may be quite unacceptable today and, on the other hand, a poor solution some fifty years ago may be better now under changed conditions. We must, therefore, adopt a dynamic attitude toward music education. We must formulate superior working hypotheses. We must collect and record the facts observed. We must classify and organize the observed facts and, finally, we must generalize from the facts observed. The last four steps constitute the scientific method. Notice their dependence on observation....If we are to elevate music and give it a status that it has not yet realized, we must turn from the method of authority and pursue a method which promises enlightenment and greater understanding. We must search for the truth, wherever it may lead. We must doubt the value of ready-made and oversimplified solutions. We must be wary of personality domination. Every teacher must be fired by the research spirit. Only by searching for the truth with care and diligence, observing the natural responses of children to various teaching situations, and studying the data so observed are we likely to convert music teaching into music pedagogy; music training into music achievement; and music learning into a joyous experience for both the child and the teacher.[2]

These words of Kwalwasser's were composed in 1935. In the same year, M.E. Wilson wrote the following:

> The difficulty in the way of music research today is not that there have been too many errors in the investigations nor that the skeptics have been too noisy with unwarranted criticism, but that the average music teacher has not the least interest in what is investigated or proved by scientific research....Our solution lies in stimulating the teacher himself to carry on some research.[3]

Another scholar by the name of Kittle wrote in a similar way in 1932:

> Recent developments and trends in scientific educational research present a distinct challenge to music educators, a challenge that should lead to thought and action. It lies in the manner in which those engaged in guiding music education reply to the ever-present question, 'Are you teaching valuable and essential things in your school music work, or are you wasting time on matters which are unimportant?'...The criticism that music lags behind the other subjects of the curriculum in adopting the scientific method, is a just one. Many studies have been carried on in other fields during the past years; they have led to the justifiable elimination of much unnecessary and irrelevant material. In some cases, findings of such research have led to the almost complete revamping of the course of study then in use, and in practically every instance the results secured by the studies have amply proved their value....We are striving always for a higher level of musical activity in this country than the present one, but scientific research should enable us to more effectively maintain the present level, and through elimination of the unnecessary phases of our work, allow us to train our students more thoroughly in the ways that will lead to our goal of genuine and lasting appreciation of music. Science and art can be combined, and the proper combination will mean much to the future success of our work.[4]

The need for the use of the scientific method was also expressed by Jacobsen in 1930:

> Extensive research has been carried on in Reading, Handwriting, Spelling, Arithmetic, and other elementary school subjects. However, very little has been done in the field of music. The scarcity of research in music is due to various reasons, among which are the lack of research knowledge and interest among

> musicians, and the practice of imitating the work done by a few writers instead of finding and attempting new problems....Much of the work which is labeled 'research' in music is nothing other than opinion of the writer. The great need in the field of music is genuine scientific research, but there are less than eight men in this country who can actually be called research workers in this field....Among the many fields in which research in music can be carried on, some of interest at the present time are tests and measurements, statistical studies, psychology of reading and performance, music therapeutics, appreciation of music, and the emotional effect of music.[5]

In 1928, Peter Dykema exhorted his colleagues as follows:

> We need to carry on our studies along at least three lines:
>
> A. Musical Endowment
> B. Methods of Teaching
> C. The Results of Teaching, Practice, Growth, or whatever it is added to endowment produces the musical power of the individual as he grows up.
>
> ...Until very recently music teaching has been practically autonomous. Each system has been a law unto itself, and the only source of comparison was the various music series. In 1921 the Research Council of the Music Supervisors National Conference promulgated what they considered a standard course of study. This has been influential in suggesting potential standards of measurement. Up to the present, however, only one significant study has been made to determine to what extent standards suggested are being attained in the United States. That study covers only five school systems and therefore there is a need of extending the scope and checking upon the results of this single investigation.[6]

If there is a question about the appropriateness of empirical and scientific method on Music Education problems, let these words of long standing be a rebuttal. Music Education has consistently avoided its responsibilities in the pursuit of fact and truth about the teaching-learning process. Music Educators have used the excuse that music is an art for their slovenly ways in the classroom. A few lonely people have tried to meet this responsibility. It is our task to reduce their loneliness and help our people become a profession.

The sociologist views a profession with relatively specific meanings in mind. As Ostrom would put it, a profession has "command over an intellectual discipline or field of knowledge that has demonstrated the basic validity of its knowledge and its methods of analysis for dealing with practical problems."[7] We are not a profession by these criteria. We do not have a discipline or a body of knowledge. But both are possible. This Conference is an effort toward that end.

What is the character of this Conference? The answer to this may be found in two comparisons. First, the Yale Seminar must be mentioned. This was the spawning ground for much that has happened and is yet to come. It was a gathering which produced a paper intended to goad Music Educators into meeting their responsibilities. That report angered me because I could refute its implicit accusations only by referring to exceptions to the rule. Our endeavor may be similar. When one sets guidelines for those who are not following them already, there are bound to be negative feelings. But in the long run, we are obliged to cause activity and bring about change.

Another conference was held in Art Education. The Final Report of that conference was sent to you. That conference was basically a Symposium, a collection of papers read and discussed. No attempt was made to establish directly guidelines and criteria for research in Art Education. These were left to the individual as a task of interpretation. This is not the intention here. The purpose here is to receive and convert ideas into a consensus of what ought to be, knowing that ten years from now a revision may be in order. At least, let us hope that we will change the tempo of evolution as we have known it.

In short, let us leave the alleys of Athens and by various paths ascend to the top of Mount Olympus. When we meet there, let us look down over the roof-tops of the city and appraise what we see. Particularly, let us think of the children and then think of their elders and ask whether the one should become the other or become something different. And while we are there, let us ask ourselves how much do we know, why do we know only that much, and how we can know more. Let us turn to our fellows who neither play the kithara or aulos nor sing priestly songs but who study man the person, man the social being, man the learner, man the teacher, and man the knowledgeable doer. Let us converse with them because they can teach us much. And when we have appraised and listened and conversed, let us scratch on a papyrus some dreams about how man can search for ways to help the children find value in the sound of the kithara, the aulos, and priestly songs. Then, let us give the papyrus away to the citizens to use as they will. Let us hope that what was scratched with our styli was so well done that the hours together on the mountain will have been good.

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A SEARCH: TO LEARN, TO TEACH, TO USE AND TO UNDERSTAND THE COMMUNICATIVE ART OF MUSIC

Alfred B. Garrett
The Ohio State University

Editor's note: Dr. Garrett's contribution to the Conference was informally presented from an outline. The following is a summary of his remarks which he prepared for this volume.

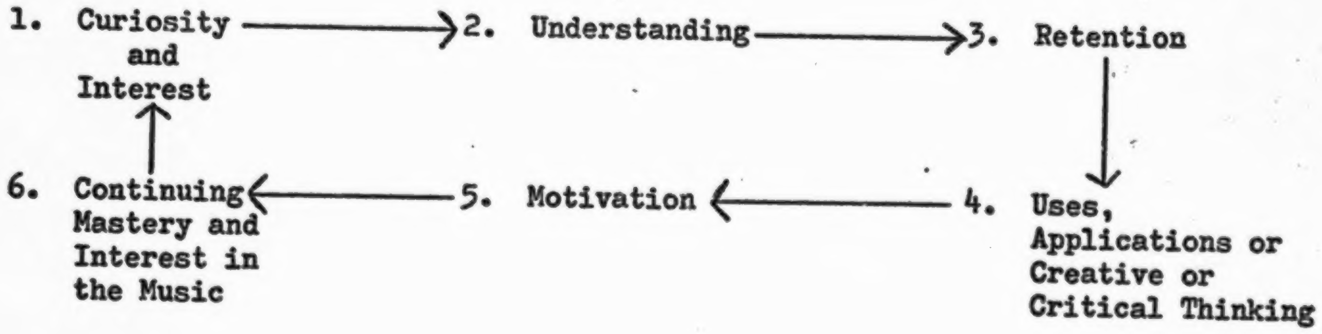
I would invite you to approach the discussion of this topic with a backdrop of the following objectives of man, the intellectual:

1) He is interested in a search to interpret the universe: this is essentially the objective of the sciences.
2) He is interested in the search to find out how he can live most effectively in the universe he learns to interpret: this is essentially the objective of the social sciences and some of the humanities.
3) He is interested in finding out how he can communicate this information he discovers about reality to his fellowmen: this becomes the objective of the communicative arts which include the art, poetry, music, drama, symbolic logic, mathematics, computer language, etc.

I would urge you to challenge your fellow scholars with the assumption that music is one of the communicative arts and as such, is one of the essential elements in developing the whole scholar and the whole man. It should no longer be considered a fringe factor in education as it has so often been considered in the past.

If you are willing to accept this assumption then the next step is to search for methods of learning how to teach, to enjoy, to use, and to understand this communicative art. This concern becomes the prime question or objective in the field of music education as Professor Cady has so clearly phrased it -- "The objective is how to teach music so that information and aesthetic experience result in concepts of what music is and in the love of making music." In my own words, I would assert that "Music education at its best is that procedure which develops a contagious enthusiasm to learn, to know, to appreciate and to practice within talent limits, the communicative art of music." Furthermore I would assert that the _general_ objective is that of a humanity -- to enrich the future;

and a functional objective is to complete the cycle:


1. Curiosity and Interest
2. Understanding
3. Retention
4. Uses, Applications or Creative or Critical Thinking
5. Motivation
6. Continuing Mastery and Interest in the Music

As you approach the problem of research in music education, you may want to ask yourself a number of questions before you consider launching a full-scale research program with your entire department or even with the majority of the department. The answers to these questions may indicate that only a select group of your department will be prepared to tackle research in music education. Such questions as the following should be faced rather squarely:

1) Is your staff capable of doing research that is characterized by "style"?
2) Is your staff competent to find new and fresh ways of asking questions on old problems?
3) Does your staff believe that if they ask nature the right question they will get the right answer?
4) Is your staff prepared to do a "systems analysis" on problems in music education?
5) Do you have the talent,the financial support, and the facilities to do that kind of research which is characterized by the question the parent asked his prospective son-in-law, "Can you support my daughter in the style to which she is accustomed?" (In order to compete in the big leagues).
6) Do you have a profile of the steps of evolution of research methods used over a period of time in other disciplines?

Many research areas and many types of research problems are available in this rich field of music education. A listing of such would include music history, music theory, music performance, psychology of music, sociology of music, methodology and teaching of music, music curricula, relation to art education or to English education, relation to creativity and imagination. There is certainly no lack of problem areas and problems to research in this field. In fact it can be one of the most fertile fields that we have. The limitation is the availability of scholars with imagination and ability to tackle these problems.

I would conclude by urging you to consider music as one of the very important communicative arts with which man is able to communicate information about reality to his fellowman. This art, coupled with others, can give us a rich reserve of collated facts or feelings about reality, both verbal and symbolic, which can enable man to enrich the future for his fellowmen. I would also ask you to consider music education at its best as that procedure which develops a contagious enthusiasm to learn, to know, to appreciate, to practice within talent limits the communicative art of music.

My field is science, but I bow in deep appreciation to your field, music and music education. We scientists try to improve on the past as we look to the future, but you scholars in the humanities look to the past with the hope of enriching the future. Yours is a noble calling; your potential contributions to our culture are limitless.

TOWARD A DEFINITION OF MUSIC EDUCATION

Henry L. Cady
The Ohio State University

Preface

The need for a definition of music education became apparent in the USOE Cooperative Research Project E-016, when the author and his colleague, Erwin H. Schneider, were faced with the task of making distinctions between what was in music and what was related to it. The author composed an operational definition including numerous approaches to the problem of definition as a means for satisfying that need. An edited portion of the definition which was considered essential to understanding the procedures in Project E-016 was included in that project's Final Report, "Evaluation and Synthesis of Research Studies Relating to Music Education." The following paper is a revision of the original document fulfilling a condition in the proposal for "A Conference on Research in Music Education."

The author is indebted to Erwin H. Schneider for many hours of concurrence and dissent in which these ideas were clarified. The product of those mutual deliberations may be found in the Final Report of Project E-016. The following effort is an attempt to broaden that operational definition to dimensions more commensurate with present and possible future music education as a whole. If there are inadequacies in this revision, let them be known as the author's. There are changes here which arise out of his own perspective of music education and should not be placed on the academic doorstep of another.

Appreciation should be expressed to Dr. Elizabeth S. Maccia, formerly of The Ohio State University and now of The University of Southwestern Louisiana, for reading and critiquing the first crude effort. Many of her suggestions are included, particularly those applicable to the peculiar characteristics which make music education so different from the traditional areas of endeavor in academe.

It is recognized that terminology and method are bases for disagreement among semanticists. There is no effort to join or evade these issues in this paper. The intention here is to enter into a discussion of a specific kind which our profession for too long has failed to undertake. If the result should someday be a more sophisticated effort which will appear in the form of a theory of music education, the hope of the author will be realized.

As a first step in joining the issues before the Conference, the following definition was sent to the participants. Two scholars were invited to present critiques of the definition to the Conference. Their papers are also included among these generative papers.

I: Introduction

The adequacy with which a word functions as a medium for thought and for communication is directly related to its specificity as a sign or a symbol. One of the basic difficulties with which man contends is the development of words which will be adequate. Historically, one finds that the meaning of a word changes. Contemporarily, one finds that the meaning of a word may have many meanings. These many meanings are directly related to the needs and intentions of men. There are those who strive for exactitude and a specificity which may be beyond the capacity of verbal symbols. There are others who deliberately evade specifying meanings because, having done so, a commitment is made which bears with it delimitations in conduct and responsibility.

The term 'music education' itself is ill-defined. From a historical viewpoint, this condition might be acceptable in that usage over a span of time is the refining process for verbal symbols. Contemporarily, however, one can find little justification for the continuation of semantic vagueness except as it would provide licence for the politically oriented and a continuation of the status quo for the undisciplined in responsibility and logical thought.

The function of language, *per se*, can be considered to be one of the many controls man uses over his environment. It follows that the objectification of experience in precise verbal forms provides man a firmer source of control. Where this control is lacking, there is confusion of this kind; there is a lack of effectiveness. The belief that prompts the following effort in the relatively strange land of semantics can be summed up as follows: music education has been an ineffective instrument in cultural change because it has failed to specify what sort of a thing it is.

II: 'Music Education' as a Term

Term means a limit. As such, a term has a specific delimitation. By themselves 'music' and 'education' are terms. When combined they become another term. The following paragraphs will explore the kind of term that they form. This exploration would seem to be essential before the term 'music education' can be placed in a proposition which would attempt to establish a delimitation of it. The basis for the following comes from numerous sources which are listed in the attached bibliography. It is a discussion of music education as it can be described according to the forms of terms found in traditional logic.

Categorematic and Syncategorematic Terms

Categorematic terms are capable of standing alone as a subject or a predicate. Syncategorematic terms do not have this capability. Because the term 'music education' is used primarily without supportive terms, it is considered a categorematic term. As such, it is the name for a complex of objects, acts, and thoughts. For example, music education includes the teaching (an act) of musical concepts (thoughts or ideas) using music books (objects). All of these are definable and namable. They form some kind of a substantive meaning which might be considered loosely as a category. Therefore, even though it is a complex endeavor, 'music education' as a term is a categorematic term. It is not a syncategorematic term. However, as a categorematic term it suffers from vagueness in many respects. It would be erroneous to imply that the term 'music education' symbolizes a distinct category in general usage.

General and Particular Terms

General terms are terms which describe a quality, property, or characteristic common to all members of a genus. Particular terms describe the character of an individual or a specific subclass, which is included in a general concept. 'Music education' is found to have usages which treat it both as a subclass and as a genus. For example, music education has been considered as a subdivision of musicology. Yet music educators refer to it as a genus. This dispute would be amusing if it did not result in practical decisions affecting academic organization, curricular content and quality, and the sources of authority.

As it is evolving, 'music education' seems to be more properly a general term. Implicit in the term are numerous activities, concepts, and information which cluster about a basic idea. Music education does not denote any particular object, act, or concept. As will be shown, music education is a complex having a valence which distinguishes it. The denotata of music education fail to represent it adequately, e.g. the performance of music or reading music. Because it is a complex, any term applied to it as a whole would have to be a general term. Therefore, the term 'music education' is a general term and not a particular term.

Parenthetically, it should be indicated here that logicians use descriptors interchangeably. The descriptor 'general term' seems to be treated synonymously as 'abstract term' and 'universal term'. The descriptor 'particular term' seems to be treated synonymously as 'concrete term' and 'singular term'. (We must conclude, therefore, that semanticists create semantic problems themselves by being dissemantical in their semantics.)

Collective and Distributive Terms

Collective terms treat a number of objects, properties, or characteristics as a group or a whole, which have similar elements throughout. Music education is a common endeavor for several kinds of participants, e.g., school music teachers, educators of school music teachers, and children who study under school music teachers. Further, it has several activities included under it, e.g., music reading, performing music, and learning about music. Therefore, the term 'music education' can be considered to include many things having something in common throughout and, as such, is some sort of a whole. It is a collective term.

Distributive terms are those which are taken to their full extension and are used to convey information about every member in a class which they name. 'Music education' is used distributively. Not only is it used to indicate a whole but it is also used to indicate a unit in the whole, e.g., a single department in a single institution; or an endeavor within the whole, e.g., the performance of music in a single school. The term 'music education' has a variety of such extensions in which it is used distributively.

The difficulty in defining music education may be found in the fact that its term is used collectively and distributively. In such uses are sources of confusion. As will be seen, there is a central variable which distinguishes music education but the term is as frequently applied to its denotata as it is applied to its central variable. Thus the distributive use of the term confuses the meaning of it as a collective term.

Univocal, Analogous, and Equivocal Terms

Univocal terms have one meaning and have the characteristic of or are restricted to things of the same nature. Equivocal terms have two or more significant meanings of uncertain classification. Analogous terms have more than one meaning of a similar or identical kind. An attempt to decide which of these sorts of terms is applicable to the term 'music education' reveals the semantic confusion in the entire field of music education. This confusion is not necessarily explicit because many of the definitional variations are implicit in operational definitions as one finds them reflected in practice and used in the research literature. As has been indicated before, many of the existing definitions do not succeed in defining the genus but only certain differentia in terms of the various denotata of the endeavor. Thus, the multiplicity of existing treatments of the term 'music education' place it in the class of equivocal terms.

It could be argued that an implicit variable about which music education centers causes it to be a univocal term or it might be considered an analogous term. Because neither of these possibilities has been explicated in a definitional form, it is assumed that the equivocation in general usage obviates a valid use of music education as a univocal term or an analogous term. This does not mean that the term 'music education' is not used loosely as if it were a univocal term or an analogous term.

Positive and Negative Terms

Positive terms imply the presence of something. Negative terms indicate the absence of it. The term 'music education' indicates the existence of something in human life. Its negative expression, nonmusic education, as far as language usage is concerned, is nonsense. Therefore, the term 'music education' is a positive term. As to whether the fact that it is a positive term is a relevant matter may depend on the objectives and practice of music education in particular circumstances.

Absolute and Relative Terms

Absolute terms are names of objects without regard to their relations. Relative terms are names of relative objects or objects which stand in certain relation. Herein is an equivocal dimension in the term 'music education.' Music education as an endeavor includes a variety of elements grouped about a central variable. As such it would be well described by an absolute term. On the other hand, it includes two distinct types of activity which are merged into one. These two types of activity, music and education, stand in a certain relation. Perhaps this is more custom than logic but the relation is there. The very verbal form of the term 'music education' reveals this relation. Therefore, it may be contended with justification that 'music education' is also a relative term revealing a character which is an inherent relation. In addition, extensions of either part of the term 'music education' lead to further relations to its inherent relation. On the other hand, just as the term 'music education' is used as if it were univocal, so is it used as if it were only absolute.

The Term 'Music Education' Characterized

To summarize, the term 'music education' is a categorematic, general, positive and collective term which symbolizes some ill-defined concept. Because the concept is ill-defined, semantic confusion arises through the term's use distributively and equivocally. Perhaps the equivocation in the use of the term 'music education' is best expressed in the fact that it is used both as an absolute term and a relative term. It follows that the current usage of the term 'music education' has questionable meaning.

III: Definitional Techniques Applied to'Music Education'

The following effort will attempt to define music education by means of several definitional techniques. If the result is a definition which finally determines the delimitations of music education, it will serve purposes beyond the hopes of the author. If the result is a step toward a definition which will clearly establish the peculiarities and essential characteristics or nature of music education, then the author will have been successful. The philosophical framework out of which this definition comes is frankly pragmatic. The definition must describe what music education is and must be a useful term. Logically, several theoretical and immediately impractical analyses could be developed but the emphasis here is the clarification of the true role of a distinct human endeavor.

Concerning the problem of a nominal versus a real definition, the latter, if possible, seems to be inappropriate. Such a definition would necessitate an unwieldy catalog of varied terms. Listing such denotata would not further the effort to detect the peculiar characteristic which distinguishes music education. Further, the listing of such a collection of real definitions would merely be a list of elements implicit in the nominal definition of music education. It follows that a real definition will not be attempted. It also follows that the definition attempted will be a nominal definition.

Synonyms and Antonyms

Synonyms for music education do exist in the literature. There are at least two which have had their usage in the history of music in education. These are 'school music' and 'public school music'. In higher education, these terms have appeared in descriptors for departments in which music teachers were educated, e.g., Department of Public School Music. The incidence of their use seems to have diminished in the past two decades and the terms are generally used when discussing music teaching and music learning in the educational situation as well as the factors which contribute to these processes. The issue of public versus private education at the elementary and secondary level of education is sometimes implicit in them but with the advent of the term 'music education', sectarianism seems to have diminished to some degree.

There are fragmentary terms used at times as synonyms, such as 'music learning' and 'music teaching' but these are not inclusive enough to be considered true synonyms. Music teaching and music learning are two fundamental aspects of one basic endeavor. They cannot be considered as synonyms except in careless usage.

It seems that no synonym actually expresses the complexity included in the term 'music education'. To consider it as 'public school music' is to infer erroneously that parochial and other non-sectarian schools are unconcerned with this aspect of education. To consider music education as 'school music' is not to explicitly include the essential relationship of higher education to the numerous aspects of music in elementary and secondary education. In addition, it omits the problems of teaching and learning in higher education itself. Music education as a term seems to have been adopted because of its generalizability to the process as a whole and its collective characteristic.

Antonyms for the term 'music education' seem to be inappropriate. As one considers the nature of music education, it seems to be more of a process than a thing. It does include objects and people but only in so much as they contribute to some kind of action leading toward a constantly changing state. In short, music education seems to be an operation. To describe it by an antithetical or opposing term would be to describe a non-operation. One could refer to non-music education as an antonym. There may be circumstances in which a non-music education endeavor is a dynamic element in an educational program but it seems hardly likely. Even if such a situation did exist, the term "non-music education" or any equivalent for this antonym does not exist in the operational vocabulary of music educators. (Perhaps this could be considered a significant omission.)

Ostensive Definition

Ostensive definitions are accomplished by indicating the thing or object which is being defined or describing what it is in terms of its denotata. As has been stated previously, music education is not a thing or an object. It seems to be a process, an operation involving various classes of things brought together about a common purpose. The resulting multifaceted activity would seem to defy any kind of definition by identification or exemplification. One could exhibit persons involved in the process or even equipment and materials but how does one exhibit an intellectual process which is the prime mover and guiding element in the process? To describe any one of these and label it music education would be no less than spurious. An ostensive definition is not possible.

Comparative Definition

Comparative definitions which place music education beside its sister endeavors in music and in other subject areas reveal not only what music education is but what it is not. Several comparisons will be made which will serve as examples of possibilities. A complete catalog of comparisons would be a formidable task and of questionable value.

1. Music History is essential knowledge in the work of the music educator. It is part of a basic background directly related to the quality of education he can give the students under his tutelage. The information and processes of musicology are important to the music educator in so much as they provide him with literature and historical information to be taught to his students as he leads them to an understanding of their cultural matrix. The information of music history and the varieties of music literature are included in what students learn or should learn. Thus, the content and the study of music history are related to the music educator's competency but they are related to the competency of all other sorts of musicians also. The pursuit of historical information and the resultant competency in musicological research are not a distinguishing characteristic, a differentia, in a definition of a music educator or of music education. Therefore, it is not a contributing factor to what is peculiarly different in the music educator as a class or in music education as a class of endeavor. It is, on the other hand, a distinguishing characteristic of the historian in music.

2. Music Theory (and experience in the art of composition) is also essential in the fundamental competency of a music educator. It, too, is what students in music learn. The relationship of music theory is not the primary concern of the music educator and is not a distinguishing characteristic, a differentia, because the value of music theory is

just as great to the performer and the music historian. It is, however, a distinguishing characteristic in the definition of a music theorist or a composer.

3. Musical Performance is related to music education and the music educator in much the same way that music history and music theory are related. There is one added difficulty in equating the role of performance in music education to the roles of music history and theory. That difficulty is tradition and practice. The literature about music education frequently equates the place of music theory and literature with that of music performance but one does not find a counterpart in the areas of secondary school music theory and history for the annual spring competitions in the performance of music. It must be acknowledged that, regardless of ideals, the performance of music actually plays a greater part in music education than any other activity. This does not lead to the proposition that music education is the performance of music. It does lead to the proposition that the major endeavor in music education as it is practiced in secondary achools is the performance of music. However, that proposition is not a statement of the distinguishing characteristic, a differentia, of music education because the peculiar characteristic of the professional performer of music is the performance of music. By degree and avowed purpose, music education and its practitioners cannot be found equal in intention and practice to the professional performer. Too, the theorist who composes at the piano and performs his work publicly would take exception to such an equating of performance and music education. It must be concluded that musical performance is not a distinguishing characteristic of music education but only receives greater emphasis than music history or music theory.

4. Psychology of Music is a recent area of knowledge. It seeks to answer questions about how humans perceive music, react to it, and produce it. It sometimes offers answers as to "why" these are so. Among its endeavors are applications of its analytical techniques to the musical situation in the classroom and studio. As such it has studied the human organism as it functions while transmitting or receiving music experience in education. Some of the variables it has investigated are the perception of the visual musical score, the aural perception of melody and rhythm, negative learning in musical performance, and the efficiency of learning by means of different teaching methods. As has been indicated in the preceding analysis, no strictly musical endeavor is primarily concerned with this process. On the other hand, the process of learning and teaching music in the educational setting is not the only concern of the psychology of music. It is not the distinguishing characteristic of the psychology of music.

5. Sociology of Music is also a recent area of inquiry. Its stage of development may be considered to be embryonic and undifferentiated. Scholars in sociology, education, and music education have made a few inquiries about the social character of music in education and the social influences affecting it. Much of this inquiry is social psychological, e.g., attitudinal studies, analyses of musical taste, and in-school and out-of-school participation. The variables appropriate to sociological inquiry about music in education seem to be demographic factors, socio-economic relationships, political structures, home influences and a realistic concept of the social factors in and affecting music education. Like the psychology of music, however, the problem of music in education is only one of its evident concerns. It is not its distinguishing characteristic because its concern is the social dimension of the gamut of musical endeavors.

6. Education is a gross term which identifies all of the endeavors involved in and related to the teaching-learning process. It is one of the genera from which the hybrid, music education, has evolved. All of the endeavors in education are found in music education. Not all that is in music education is found in education. What is not found in education is found in the genus, music.

Educationists are in reality the only people who are ultimately and primarily concerned with the educational process. Others may be interested, helpful, or even partially involved but the concept of primary concern means primary involvement. (Perhaps a better expression for this concept would be Paul Tillich's expression "ultimate concern".) Even parents are not educators in a formal sense of the word because implicit in the term 'educator' are certain skills and competencies. To imply that parents, ministers, music theorists, professional performers, et al., have these skills and competencies would be to say that such skills and competencies are indistinguishable as a class and, therefore, are a semantic myth.

It is also true that educationists cannot be equated with musicians, the persons in the other genus of music education. Their skills are not identical nor are their intentions identical. Where these two genera meet is in the music teacher in the elementary and secondary school and in the division of higher education which is primarily concerned with the problems of the teaching-learning process in music. This meeting is also found sometimes in the true scholar-teacher in higher education.

7. English Education, like music education, is a hybrid. Wedded to the knowledges of and about English are the knowledges about appropriate teaching techniques and choices of subject matter for a specific teaching task within the goals of education and, specifically, English education. Music education is similar in organization. Its dissimilarity lies in the subject matter taught and the methodologies which are peculiar to the teaching of musical art. Unlike English, music is a nonverbal symbolic system and requires significantly different techniques in the teaching-learning process. Any comparison between the two rests basically on their hybridic genus characteristic and the resultant ambivalent relationships with English or Music and Education.

8. Art Education is perhaps the closest comparison to music education that can be made. Art education is concerned ultimately with sensitivity to form, color, mass, etc., as these are perceived visually and are sensed tactilely and even kinesthetically in the process of education. The musician in education is concerned with the equivalents of these in sound. Both the music and art educator are primarily concerned with the teaching and learning of these nonverbal and nonnumerical systems. They are both concerned with the improvement of a general public taste, through the teaching of the arts. "How" to teach them and "how" they are learned is more of a concern by degree than "what" is taught. This does not mean that the quality of what is taught is not a concern. There is agreement, basically and ultimately, among those who work in the areas of art education and music education as to what should be taught or what an educated person should know. The problem is how to educate a person to nonverbal, nonnumerical, and nonpragmatic experiences in a society which is materialistic and basically oriented to numerical and verbal forms of communication. Art education and music education are very similar endeavors with very similar problems. Their dissimilarity lies in the medium of nonverbal communication with which each is concerned.

Structural Definition

Structural analysis techniques do not seem to be appropriate to music education at this time. When one speaks of the structure of knowledge, there must be knowledge which has structure. In fact, there must be a quantity of knowledge in a sufficient amount to reveal relationships and inherent organization. Here one is faced with an interesting problem. Is a body of opinion which has inherent organization and, hence, structure actually a body of knowledge? It is not so in the scientific sense. But it is so in the philosophical sense.

As one examines the "field" of music education he finds neither a body of verified knowledge of sufficient size to warrant a belief in an inherent structure nor an organized philosophy in the best sense of that term among philosophers which would be a basis for projecting a structure.

Another difficulty here is the hybridic nature of music education. It is derived from two genera. Neither of these presents more than a crude collection of data. There is no concise statement of the structure of music. There is no concise statement of the structure of education. Until these are available music education may not be definable in structural terms.

In addition, there is a question whether music education can ever be defined as a structure. It can be argued that education is, essentially, temporal and sequential. A concept of structure applied to it, therefore, could be only by analogy. Analogies are helpful in the development of understanding but when an analogy becomes an element in a definiens, then a semantic shift has occurred which may confuse the meaning sought. Music education is a sequential, eventful, and purposeful activity with physical and mental involvement. It is a process or an operation and cannot be described adequately as a structure.

There are identifiable elements in music which may be defined by means of ostensive definition. Each element exists in a relationship to others but, unlike gears and wheels, these elements themselves are dynamic and changing. The ostensive definition for a student changes even as one is establishing the definition because the student himself is changing or dynamic. Too, the definable characteristics of the teacher vary according to the task and, in addition, from day to day in relation to that task, e.g., directing the sixth grade instrumental group. And yet, ostensibly, there is the teacher and there is the band.

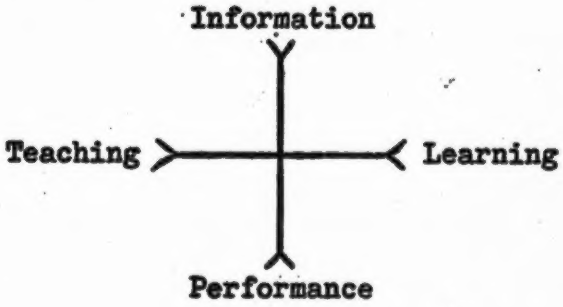
Another basic problem in trying to define music education according to structural analysis is the nature of the various elements in the process. All of the elements involved are not of the same sort. Some elements are inanimate. Others are animate. Some are movable but not always moved or used in the same way such that they may be considered a controllable variable. In fact, there are some minute processes in music education which may never be replicable such as the exact combination of events which make possible the experience of beauty. More specifically, such a rare event may be a concert of quartet music played by professional musicians in the typical elementary school multiple-purpose room. Such fortunate combinations of events may have the characteristic of a structure at the time that they occur, but, with the passage of time, they are no more. To apply the word structure to such situations is erroneous except in an analogous sense.

In conclusion, the question of structure in music education remains a vital one. As the work of scholars such as Nagel, Hempel, and Broudy permeate the thinking of music educators, a rational examination of music education as a structure may seem feasible. However, a prerequisite to this feasibility would be a sufficient quantity of information and a philosophical system.

Classification Definition

Classification techniques applied to music education initially determine the term to symbolize a composite derived from two genera -- music and education. Because it is a hybrid in meaning and practice by way of academic cross-pollination and societal need, it suffers from the lack of a definitive status, especially in academe. The result of this bimodal relationship is a discipline-wide ambivalence, especially in higher education. In one institution, music education may be identified with a school of music and administered through that organization. In another, music education may be included in a school of education and administered through that organization. This ambivalence is also manifested in the type of curriculum for the student in music education which may vary from a performance of history-oriented series of courses to an overabundance of courses in methodology. It is further related to the longstanding and seemingly eternal argument of content versus methodology which is engaged in by authorities in education and in music who would instruct the other parent of the hybrid what it should or should not contribute. Interestingly enough, this very debate has created the hybrid music education. As such, it is differentiated from both derivative genera. Thus, it is a genus in itself.

In order to determine what music education is, one must ask the question "What sort of a thing is it?". In answer, one may offer the concept of interaction between two sets of polarities. The basic concern of the music educator is how to teach music so that information and aesthetic experience result in concepts of what music is and in the love of making music. One set of polarities may be considered to be the teaching-learning process in terms of psychological and sociological information. Another set of polarities is the spectrum from spectator to participant or from the information to performance. These two sets of polarities intersect as follows:



It is the concern and direct involvement in the point of intersection which differentiates music education as an endeavor. In fact, there are numerous points of intersection. These intersections are the fundamental characteristic of the genus 'music education'. This is its differentia from all other musical endeavors and all other educational endeavors. Some of its denotata thus become the teaching of music reading, the teaching (directing) of performing groups, the teaching of theory to the college level, the teaching of college students in the objectives and methods of teaching the substance of musical art and its varieties of experience. This list of denotata could be multiplied to considerable numbers with increasing specificity. It is doubtful that a heirarchy would result but most certainly a pattern of relationships would emerge. This pattern would symbolize an operational relatedness in a multifaceted process. The term 'process' applies to music education because there are numerous procedures involved. The kinds of procedures and their appropriate techniques form the genus 'music education'.

One other aspect of these polarities must be considered, namely, the mutual relationship of the two axes. The information-performance axis is representative of the parent genus 'music' or content; the teaching-learning axis signifies the parent genus 'education' or methodology. Both of these axes are within the human context, e.g., the content-information axis is human related and the teaching-learning axis is also human related. The point of intersection is a point of human interaction, either directly or indirectly. Thus, the primary concern from the educational point of view would seem to converge ultimately upon the student. It is he for whom education has existed traditionally. What he is and how he should be treated is its primary concern. However, in terms of the endeavor in music education, that concern must be for his musical development or music has no reason for being in education.

As extensions of this argument and perhaps parenthetical to it, there seem to follow certain lines of reasoning. It seems that music education has a basic concern in the problems of reaching the student rather than in the perpetuation of musical art. Music exists because people ordain it to be and not vice versa. As for art for art's sake, no work of art ever enjoyed or understood another work of art. The perpetuation of musical art is for the sake of people because people need its continuation. The perpetuation and evolution of musical art is a concern of the music educator in the sense that he is caring for people. Here one may reiterate a distinction which was suggested under Comparative Definitions. The role of the music educator is not the role of a music historian or a music theorist primarily. His role is not that of a perpetuator of musical art but that of an educator to music art (a leader of students to musical experience), an analyst of the process by which students are educated to musical art, and an educator of teachers of musical art, especially for the schools.

If music education is a hybrid evolving from the meeting of two concerns and content areas, it follows that it must utilize both in order to contain both. The facts of methodology as well as musical art must be the sine qua non of the music education process. It can be assumed that these are assimilated by professional personnel and that the materials essential to the process are understood and extant. The utilization of these for the enrichment of students is a basic characteristic of music education. For the purposes of definition, it is irrelevant that some forms of music education fail to achieve this kind of operational level. Further, it is irrelevant to indicate the lack of factual information in some music education persons. Such irrelevancies are based on the frailty of human flesh and not on the differentia that is being discussed here. No matter what the inadequacies of practice may be, the distinctive characteristic of music education is a process or an operation which is designed for the transmission of knowledge, skills, and aesthetic experience in music.

Operational Definition

Operational analysis techniques appear to be appropriate to the nature of music education. Music education is a purposeful activity having certain objectives. As such there are processes through which persons give and receive the content of music in a social setting. Because it is procedural, because there are functions for persons and things, because there are events which require a certain sequence, because even the term 'performance' is in the common vocabulary of the musician, music education can be considered an operation. Synonymously, it may be considered a process. What sort of a process is it? It is a purposeful process in which information is transmitted, skills are learned, and aesthetic sensibilities are changed within a cultural milieu.

Operations are purposeful in that they have ends, purposes, or objectives. Music education has the primary objective of educating students to the art of music. Regrettably, an analysis of this objective leads one to multiple meanings in terms of various contexts and, therefore, a variety of quasi-objectives. From one point of view, there seem to be two levels at which these objectives appear to influence educational endeavors -- the societal level and the individual level. At the societal level, educators aspire to a general improvement of cultural activity or, more specifically, a more general use of the highest level of achievement in musical art. This is vague, but nevertheless, it is a conceptual framework for the music education endeavor as a whole. At the individual level, these objectives are no less limited but, in the better music education programs, they are tailored to meet the needs and idiosyncrasies of the student and his peers. This meeting of needs may result in forms of music in education which are not immediately commensurate with the overall objective for music education at a societal level.

The meeting of individual needs in the educational situation leads to another meaning of music education which is apparently more accurate. Actually, music education (the teaching-learning process in music) occurs only in the classroom at a particular time, if one assumes the concept of formal instruction existing basically in educational institutions. All other implications for the term 'music education' are technically extensions of the term. Again and conversely, there is no such thing as music education on a national basis. There is only a commonwealth of persons and facilities. The process exists only at a particular time between the teacher and the student(s). This may seem to be a picayune point but in reality it is a basic concept prerequisite to an understanding of the differentia which distinguishes music education and particularly the problems involved in it.

The primary objective of music education is the educating of students to the art of music. This can be subdivided into three objectives -- the transmission of the musical heritage or musical culture in the form of its great music, past and present; the acculturation of the individual in terms of the practical skills which will enable him to function in the music of his society; and, third, the development of the individual's aesthetic sensitivity or his sensitivity to the beautiful in music. Thus, music education has three basic subpurposes requiring three mutually reinforcing and overlapping processes or, more accurately, subprocesses. Each of these subpurposes contributes to the overall objective of a musically educated person. Each has its own system within which individuals and materials function. Each system is constrained by time and place. The various functions of personnel and materials in each of these subprocesses comprise the concerns and process of music education.

If operations are purposeful and if they have processes by which they achieve those purposes, then a starting point and an end may be inferred for operations. In the teaching-learning process in music, the end is a musically educated student. The starting point of the process seems to be the person who initiates the teaching-learning process, who imparts information, teaches skills, and determines the kind of experiences which will aid the development of aesthetic sensitivity. The person or the starting point in formal music education is the teacher. As such, the process may be considered the shifting of experience from one locus to another, from the teacher to the student. In short, the quality of the education of the student is directly related to the quality of the teacher as an educated person and a practitioner. No teacher can teach that which he has not experienced. Also, students can learn only what they experience. The teacher's experiences are a direct determinant of the student's experiences. Thus, the quality of not only the student's education, the primary objective, but also that of the teacher is the concern of music education. It should be noted that the quality of the starting point of the process, the teacher, is a cooperative concern in all education but that the information and skills necessary to the teacher as a functioning element in the process of music education itself is the peculiar contribution of music education and is its distinguishing _differentia_. Too, the quality of the primary objective, educating students to the art of music, is a primary concern of music education which is delegated to it by education as a whole.

In general terms, music education is a process which occurs between two experiential loci and is divisible into three subprocesses or, in operational terms, stages. The qualities of the two experiential loci and the variables in and constraining the three stages constitute the operational _denotata_ of music education. These can be described more specifically as follows:

I. _Locus: The Music Teacher_. The music teacher is the starting point of the teaching-learning process. It may be argued that students are a generating force in the process. However, the teacher is the determiner of whether or not a student's desire or interest will be fulfilled. The deliberations and decision of a teacher are from him as a total person. He brings to the teaching-learning process a psychological set, behavior patterns, skills, information, characteristics, and a personality which are a result, in part at least, of previous experience and the environment of the moment. These are the qualities of the teacher which are inherent in his functioning and as such they may become variables of specific concern. Some of these qualities (variables) are developed or evolve _a priori_ to the teaching-learning process and comprise the basis for functioning. Others are developed or evolve in the teaching-learning process and act as variables in the process. Thus, the concern for these qualities lies in their development or state of being prior to the process, their variation in the process, and their function in and effect on the process. Some of these qualities may be sorted as follows:

A. The Teacher Prior to Professional Status
  1. Personal Factors
    a. General
      abilities
      attitudes
      characteristics (age, marital status, etc.)
      emotional traits
      interests
      motivations
      personality
      value systems

b. Musical

abilities
creativity
interests
motivations
musicality
value systems

2. Social Factors

a. Nonprofessional

social class background
social behaviors

b. Professional

social role concepts
social behaviors

3. Education

a. General cultural influences (past)

socio-economic structure of childhood
community cultural opportunities
school and community relations
socio-economic structure of home

b. Musical experiences: informal

community
school, college and church

c. Musical experiences: formal

private instruction
school and college

d. Pre-professional competencies

academic in music
academic in non-music
music education courses
performance skills
teaching

B. The Teacher Functioning in the Teaching-learning Process

1. Influence of Personal Factors
(See above: Personal Factors)

2. Influence of Social Factors
(See above: Social Factors)

3. Influence of Education
(See above: Education)

II. Locus: The Student. The student is the focal point at the end of the teaching-learning process in music. His learnings are its product. Because it is the student who learns, what the student learns is dependent on what he is. What the student is determines not only what he can be taught but how it can be taught to him. The nature or qualities of the student are therefore an intrinsic factor in music education. Like the teacher, he brings "psychological set, behavior patterns, skills, information, characteristics, and a personality which are a result, in part at least, of previous experience and the environment of the moment." Some of these qualities may have developed prior to the formal teaching-learning process.

As in the case of the teacher, these are the qualities of the student which are inherent in his functioning and as such they may become variables of specific concern. Some of these qualities may have developed or evolved prior to the teaching-learning process and comprise the basis for functioning at any particular place and time in the continuum of education. These same qualities may be modified in the teaching-learning process and act as variables in the process. This modification, such as in the case of values, is a desired product of music education. Thus, the concern for these qualities lies in their development or state of being prior to the teaching-learning process, their modification by the process, and their function and effect on the process. Some of these qualities may be sorted as follows:

A. The Student Prior to the Teaching-learning Process at a Given Place in the Continuum of Education
    1. Personal Factors
        a. General
            abilities (cognitive and noncognitive)
            attitudes
            characteristics (age, maturation, etc.)
            emotional traits
            interests
            motivations
            personality
            value systems
        b. Musical
            abilities
            creativity
            interests
            motivations
            musicality
            value systems
    2. Social Factors
        a. Socio-economic background and status
        b. Social behavior (musical and nonmusical)
            school
            nonschool
    3. Education
        a. General cultural influences (past)
            socio-economic structure of childhood
            community cultural opportunities
            school and community relations
            socio-economic structure of home
        b. Musical experiences: informal
            community
            school, college and church
        c. Musical experiences: formal
            private instruction
            school and college
B. The Student Functioning in the Teaching-learning Process
    1. Influence of Personal Factors
    (See above: Personal Factors)
    2. Influence of Social Factors
    (See above: Social Factors)
    3. Influence of Education
    (See above: Education)

III. The Teaching-Learning Process. The teaching-learning process is a purposeful operation of considerable complexity. Some functions which compose these complexities have been identified, e.g., music reading. Other activities continue to be vague, random, ill-defined, and undifferentiated, e.g., "general music." Therefore, it follows that although the teaching-learning process can be identified as an operation composed of several stages in varying degrees of refinement, detailed operational analysis is not feasible at the present time.

It has been stated that music education has one primary or fundamental objective, i.e., educating young people to the art of music. It was stated also that this primary objective could be divided into three subobjectives -- the transmission of the musical culture, the acculturation of the individual, and the development of aesthetic sensitivity. These are conceived as being inclusive of the endeavors and purposes in the teaching-learning process within the constraints of time and place. They are not discrete, e.g., one may transmit that part of the musical culture found in the works of Brahms by teaching the skill of singing to create an aesthetic experience in nineteenth century literature through the medium of his "Liebeslieder Waltzes." In this example, the primary endeavor of transmitting an element of the culture requires the use of a skill and may result in aesthetic development.

These broad subobjectives for music education imply three subprocesses for the total teaching-learning process, each being an operation leading to an objective. These subprocesses, too, are not discrete and the variety of studies within them reflects their interrelatedness. This interrelatedness does not mean that specific studies cannot be treated discretely and cannot be categorized according to the central variable of the study.

A categorical organization for the three subprocesses or stages of operation may be established in terms of the three subobjectives for music education. The following outline of categories may be best understood if each subitem is prefixed with "The teaching and learning of...":

A. Stage I: Transmission of the Culture
    1. History
    2. Literature
    3. Theory
B. Stage II: Acculturation of the Individual
    1. Perceptual Skills
        a. Listening
        b. Reading
    2. Expressive Skills
        a. Playing
        b. Singing
        c. Composing
C. Stage III: Aesthetic Sensitivity
    1. Development of taste
    2. Development of creativity

IV. Constraining Factors. No process exists in a discrete state. It is constrained by its occurrence at a given time and in a certain place. It has a context of some kind which restricts it, limits its scope, and even affects its nature. This context acts as a constraint in the sense that it affects direction, quality, and quantity. In applying these concepts to music education, a dynamic operation, one finds several realistic constraints. These affect the teaching-learning process as being mutely involved, such as buildings and equipment; indirectly influential, such as a community's attitude toward the arts in education; or directly influential, such as philosophical assumptions, administrative structure, and curriculum. These are constraints on the teaching-learning process for musical art. They may be identified more specifically as follows:

A. Administration and Supervision
    1. Administrative practice
    2. Administrative organization
    3. Faculty schedules
    4. Supervisory practice
    5. Class scheduling
    6. etc.
B. Curriculum
    1. Types (College preparatory, vocational, etc.)
    2. Objectives (Professional versus Nonprofessional)
C. Community Influence
    1. Adult influence
    2. Community activities
    3. Socio-economic factors
    4. Mass media
    5. etc.
D. Contests and Festivals
E. Philosophy of Music Education
    1. School
    2. Community
F. Teaching Aids
    1. Buildings and equipment
    2. Films
    3. Recordings
    4. Television
    5. Audio-visual aids (General)
    6. etc.
G. Professional Societies
    1. Music
    2. Nonmusic

Part IV: 'Music Education' Summarized and Specified

Introduction

The foregoing discussion has attempted to apply a variety of analytical techniques to the term 'music education'. Each kind of analysis reveals a dimension of 'music education' as a term and as an endeavor; each also reveals strengths and weaknesses.

Term Analysis Summarized

'Music education' is a categorematic term because it is the symbol for a complex of objects, acts, and thoughts having an apparently central concern. Because it includes a variety of qualities, it is also a general term rather than a particular term. Because it seems to gather together under one symbol a number of constituents, it is considered to be a collective term. In addition, because it is used distributively among some of these constituents, it is considered to be a distributive term. Regrettably, music education is an ambivalent activity and its term is equivocal, even though some persons would use it as if it were univocal. It is a positive term because its negative expression would be nonsense. In general usage, 'music education' is used as if it were an absolute term. However, its equivocality arises from the fact that it is relative in nature and action -- a vacillation between music and education. It follows that the current usage of the term 'music education' is based on questionable meaning and that a clarification of the definition for music education is needed.

Definitional Techniques Summarized

Synonyms and Antonyms reveal a variety of uses and implausible possibilities. Synonyms have been known for 'music education', specifically 'school music' and 'public school music'. Both of these omit the teaching and learning of music in higher education and the relationship of higher education to music in the schools. Antonyms are not appropriate, the closest being the nonsensical term 'non-music education'.

Ostensive Definitions do not apply to music education. It is not a thing or an object.

Comparative Definitions reveal music education to be most closely related to an endeavor like art education. The quality of nonverbal communication and experience as a central concern differentiate music education from many substantive areas. Too, it is characterized by teaching and learning even though it concerns itself with music history, music theory, and music performance.

Classification Analysis determines music education to be classified as a composite term derived from two genera -- music and education. It thus signifies a hybrid, a unique operation in academe, and a genus in itself.

Structural Analysis determines music education to be without a body of knowledge of sufficient quantity and quality to be considered an academic discipline *per se*. In order to find a structure, one must be able to determine valid relationships and the sorts of dependencies in those relationships. At the present time, this does not seem possible in music education.

Operational Analysis determines music education to be a process or an operation. It is purposeful and is found to occur at a given time in a certain place. It is an interaction between two loci -- the teacher and the student -- with the primary objective being the education of the subprocesses leading toward three subobjectives: transmission of the culture, acculturating the individual, and developing aesthetic sensitivity. The achievement of these is determined to a degree by the constraining factors of time and place.

The Definition Specified

The specification of the definition of music education, therefore, seems to be as follows:

> Music education is the practice of, the participation in, and the study of the process involved in the teaching and learning of music within educational institutions in order to fulfill three fundamental objectives, namely, the transmission of the cultural heritage in music, the acculturation of the individual to his musical environment as a participant, and the development of the individual's aesthetic sensitivity, as these may be achieved under the influence of constraining factors.

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THE DEFINITION OF MUSIC EDUCATION: A CRITIQUE

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This paper must begin with an apology. The task assigned has been to produce a critique of the Schneider-Cady definition of music education as given in chapter two of the final report of a research project carried out with support of the Cooperative Research Program of the United States Office of Education and entitled "Evaluation and Synthesis of Research Studies Related to Music Education." A copy of the report first reached my desk on November 1. A revised version of chapter two arrived in Ann Arbor on February 3. The original version of chapter two was written after long study, and one would presume that the revised version represents the results not only of the original long study but of considerable subsequent reflection. Therefore I must ask some indulgence for what follows. It will not be possible to be entirely fair to Professors Schneider and Cady, nor to myself, for that matter, since what follows must necessarily be a hurried critique of something they have spent several years developing.

An apology may also be due my long-time friend Thayer Gaston. We have not consulted with each other in any way with regard to what this paper or his paper contains. The letter from Professor Cady inviting us to prepare these critiques refers to us as "two scholars of known varying approaches to music education" but does not say in what way we vary. If it should turn out that we do not vary at all, then another apology may perhaps be due Professors Schneider and Cady. On the other hand, if we do indeed vary in our approaches to this subject, I should like to make the fact very clear to Professor Gaston and to all present here this afternoon that I have the highest respect for all of the contributions to music education made by Professor Gaston throughout his distinguished career and that I have hitherto been unaware of any matters of disagreement between us.

One more consideration perhaps requires a certain apology. Professor Cady's letter of January 23 suggests that "there . . . be no reservations in your most negative criticisms." This is a courageous suggestion indeed, one worthy of the greatest admiration. On the other hand, negative criticisms are always difficult to frame in positive terms, and it is my most earnest hope that this paper can have a positive effect rather than a negative one.

Let us proceed immediately to the task assigned. Definition itself is always a difficult problem. There is an old saying to the effect that a problem once defined is half solved. This saying, true as it is, in my opinion, should by no means be interpreted to suggest that definition is easy. In seeking to arrive at a definition of the term 'music education', we should perhaps remember the Red Queen in Alice in Wonderland, who insisted on being the master of the words she used. When she used a word it meant exactly what she wanted it to mean.

It is the suggestion of the present paper that we use the term 'music education' the way we want to use it rather than to search for a definition of what music education "truly" is. For example, in American college life the term is used in reference to the faculty teaching courses specifically designed to prepare music students to teach in elementary and secondary schools. Such a definition is a practical one, entirely fit for the purpose it serves. However, this definition is probably entirely too narrow for philosophical and scientific purposes.

The Schneider-Cady definition as it appears on page twenty-nine of the revised version of chapter two reads as follows: "Music education is the practice of, the participation in, and the study of the process involved in the teaching and learning of music within educational institutions in order to fulfill three fundamental objectives, namely, the transmission of the cultural heritage in music, the acculturation of the individual to his musical environment as a participant, and the development of the individual's aesthetic sensitivity as these may be achieved under the influence of constraining factors."

It seems to me that the definition may be challenged on at least two counts. First of all, the phrase "within educational institutions" should probably be eliminated. Although for practical purposes, we consider music education to deal with music in elementary and secondary institutions, for philosophical and scientific purposes of coming better to know what music education might be and how we might better carry it on, it might be well to consider the province of music education to include the problems of teaching and learning of music under any conditions, at any time, at any place. Music does not change its nature when it comes into the school room any more than does a child or a teacher. As a matter of fact, one of our most practical and pressing problems in music education has to do with the music school children learn outside of school and with the effect that this has on their musical development. It is possible that knowledge concerning how children learn music out of school could be useful to us in teaching them music in school.

In the second place, and much more fundamentally, the Schneider-Cady definition may be the answer to the wrong question.

In his letter of January 23, after suggesting that there be no reservations in our most negative criticisms, Professor Cady goes on to make the following statements: "The conference must find a central variable for music education research. This variable must be realistic. Therefore, what music education is as differentiated from what is related to it is a crucial matter. We must get to this issue directly so that the conference can progress."

It may be wiser to approach the matter from a different intellectual direction. To ask what music education is implies somehow that when we know what it is, we shall be able to find it out there in the world somewhere, if only we look hard enough. To do so implies also that we cannot study music education until we have found it. This implication may account for the opinion expressed by Schneider and Cady in their report that most of what has been considered by some to be research in music education is in fact irrelevant if not incompetent. This accounts for the peculiar and difficult intellectual position in which I believe they find themselves to be at the present time. The introduction to their final report begins with the following statement: "The three greatest needs for the continued growth of the music education profession today are believed to be: (1) an evaluation and synthesis of the results of completed research relating to problems in music education with implications for current practices and needed research, (2) dissemination of the knowledges gained from the research of this type, and (3) scholarly research on pertinent problems in music education."

And yet, although the need for the evaluation and dissemination of research information is affirmed, the remainder of the study makes clear that, on account of the narrow definition of music education adopted, comparatively little of what has been considered research by others is considered to be competent or relevant by Schneider and Cady (see p. 81).

(Because the writer has been editor of the Journal of Research in Music Education since its founding in 1953, and because my distinguished colleague Professor Gaston has been an editorial associate of the Journal since 1961, you will perhaps forgive my making a long parenthesis at this time on our own behalf as well as on behalf of all of the dedicated men and women who have served as members of the editorial committee or editorial associates of JRME. The Schneider-Cady report includes the following two sentences: "Some studies, primarily historical reviews, surveys, and lists of teaching materials, have been published since 1953 in the Journal of Research in Music Education. Few experimental studies have been included in the contents of this publication, which has not had a wide distribution in the music education profession." I should like to assure you that we have published every experimental study submitted to us and from the very first have made continuing and systematic attempts to secure such studies. The Journal of Research in Music Education has the largest circulation, now in excess of 9000, of all scholarly journals in music and is readily available to all members of the music education profession by the simple act of taking out special membership in the Music Educators National Conference at our annual roll call. Of the one hundred and seven articles published in JRME from 1953 through 1962, twenty-six reported experimental studies or were critiques of experimental studies, twenty-four articles reported quantitative studies of current status, thirty-six articles dealt with various aspects of the history of music education, eighteen articles were philosophical in nature (some of these dealing with scientific problems), and three were special bibliographies. Thus, approximately fifty articles reported the results of research dealing with quantified data while fifty-four articles were historical or philosophical in character. What needs to be emphasized here is that this approximately fifty-fifty distribution of articles between what might be called quantitative and historical areas did not follow from any adopted policy of the editors of the Journal of Research in Music Education but rather resulted from the simple fact that these were the articles submitted to the editors. It may be interesting to note that during the period subsequent to that dealt with in the Schneider-Cady report, the period from 1963 to the present, of the seventy-seven articles published thirty-one report experimental studies, fourteen report quantitative surveys of current status, and thirty-two report historical and philosophical investigations. Thus, the tide seems to be turning in favor of experimental studies. Depending upon one's point of view, the development may be considered hopeful or alarming. However, it is a development that was not determined by any change of editorial policy but rather what might be considered the returns of the ballot box, that is, the proportion of acceptable articles submitted for publication.)

It is a difficult matter to maintain that the evaluation and synthesis of completed research is one of the greatest needs of music education while at the same time maintaining that little research of a competent and relevant nature has been accomplished. This situation can be avoided by considering music education not as something that is but rather merely as a term which we may properly apply to anything relating to the teaching and learning of music. Adopting this definition will immediately accomplish one very important purpose: it will unite us rather than divide us. Little is to be gained, in my opinion, by adopting a definition for music education that will divide music educators into two or more intellectual camps. The Schneider-Cady final report gives evidence that their definition of music education has led them to conclude that research studies conducted according to procedures developed in the behavioral sciences are almost the only ones that can be considered relevant and competent in music education. If research studies are to be excluded that are carried along in accordance with procedures developed in the humanistic disciplines, then it becomes apparent that we shall need two Journals of Research in Music Education, one for the humanists and one for the behavioral scientists among us.

Because of the short time given me to prepare this paper, I hope that you will forgive my quoting from something published in the fall 1953 issue of the Journal of Research in Music Education under the heading, "A Note Regarding Editorial Policy." This note began with an expression of appreciation to those who had written congratulatory letters to us upon the appearance of the first issue of the journal. It went on as follows:

> Together with commendations, moreover, a variety of important questions were raised in regard to the editorial policy as this policy was reflected in the types of articles published. Diverse as the actual phrasing of these questions was, they revealed in import three basic attitudes toward research and what research 'really is,' attitudes which are to some extent mutually exclusive, and in the light of which one or another of the articles printed may have had a doubtful place in a journal such as this. To put it very briefly indeed, the three attitudes may be characterized as those of (1) the practicing music educator, (2) the experimental psychologist, and (3) the musicologist. The first praised such articles as dealt with actual practice in school music but questioned the value of the historical studies. The second recommended that nothing be published except reports of 'pure' (i.e. quantitative) research. The third thought little of the discussions of actual practice but expressed great satisfaction with some of the historical pieces.
>
> There can be little doubt that the attitudes revealed in the comments received represent very well the attitudes to be found among members of the music education profession as a whole. Thus, the editorial staff feels a deep obligation to provide a further statement of the thinking which underlies its policies in selecting articles for publication.
>
> Let it be admitted at the very beginning that the three basic attitudes described above can be found within the membership of the editorial staff itself. Hardly an article was accepted or rejected without certain reservations on someone's part. But, far from considering this fact a serious difficulty, it was felt to be a source of strength, for on this account the widest variety of viewpoints could be given recognition, with the hope that all viewpoints might finally be evaluated

> within the largest possible intellectual framework. Furthermore, there is nothing wrong with diversity of viewpoint in itself. But for holders of one viewpoint to deny others the right to be heard might be unwise for many reasons. Certainly the editorial staff has no such intent, nor can it ever have, so long as it truly represents the profession of music education as a whole.
>
> What then are the actual criteria by which articles are selected or rejected? Aside from simple and necessary requirements having to do with expression, logic, documentation, and other mechanics of writing, all articles submitted are evaluated in the light of three considerations. Framed as questions, these considerations are as follows:
>
> 1. Is the article based upon serious and extended study of some aspect of music education? In this question, the term research is defined by implication; that is, its reference is not limited to historical study, nor to scientific study, nor to the study of present-status, but embraces all of these as well as any other form of study, so long as the work has been rigorously prosecuted and effectively reported. Furthermore, the term music education is to be taken in its widest sense. Music education involves, in addition to the teaching of music in the elementary and secondary schools, the training of the teachers themselves. A sizable body of music educators consists of those who teach music in colleges to prospective and in-service teachers. Bachelor's, master's and doctoral degree programs now offered in music education must be planned and directed by music educators. The range of interest of students and teachers in these programs is very wide, and, while the editorial staff must use a certain discrimination as regards subject matter in selecting articles for publication, neither can the staff restrict too narrowly the scope of subject matter presumably, potentially, or properly of interest to music educators. In the light of these considerations, the editorial staff has devised a rule whereby the term music education is considered to relate to music teaching of any kind as well as to other musical activities, such as directing community orchestras, bands, and choirs, in which the aims of the endeavors may be described as cultural rather than professional.

The note went on to say that we would be inclined to publish articles by a member of the music education profession according to the logic that what one music educator considers worthy of investigation is on that account of possible interest to other music educators. The note also said that we would publish articles based upon academic theses and dissertations in music education. The editorial staff felt that special consideration should be given to such articles for a variety of worthy purposes, "not the least of which are to obviate much duplication of effort occasioned by the unavailability of most theses and dissertations and to aid in the establishment of qualitative standards in research by holding up the best to public scrutiny."

Everything that has happened in music education since the adoption of the general policies and definitions stated and implied in the editorial note of 1953 has convinced me of its basic wisdom. I suggest here as earnestly as it is possible for me to do so that this conference extend these definitions to our profession at large, and particularly to those in our profession who will be conducting research.

To adopt such open-ended definitions of music education and of research in music education will allow us to concentrate upon problems of immediate concern. That is, we shall be able to concentrate directly upon the peculiar problems inherent in conducting any research, the problems of adequate sampling, of choosing appropriate topics, of getting questionaires made out appropriately and responded to satisfactorily, of securing historical documents and evaluating them properly, in short, of carrying on the proper business of behavioral scientists or of historical scholars in music education, in positive rather than negative ways.

A few other points perhaps deserve consideration. It seems to me important that we seek not only to avoid dividing ourselves into antagonistic camps and so isolating members of the profession from one another, but that we also seek to avoid isolating ourselves from the larger worlds of music and of education. It seems to me that the problems of teaching the history of music in high schools are not significantly different from the problems of teaching the history of music in liberal arts colleges. Nevertheless, if I interpret the Schneider-Cady definition correctly, the history of music must be taught by a music educator in secondary schools and by a musicologist in colleges. Similiarly, it seems to me that conducting a performance of singers and players of Orff instruments in the first grade, or an orchestra in the junior high school, or a high school orchestra, or a civic orchestra, or a professional symphony orchestra -- that these problems have more similiarities than they have differences. Certainly, it would not seem that the problems are as different as black and white.

Another difficulty with the Schneider-Cady definition would seem to be that it excludes as irrelevant and incompetent all basic research, in favor of what might be called applied research designed to effect immediate results in elementary and secondary school classrooms.

Thus, the bibliography of relevant studies lists an excellent article by George Kyme, "An Experiment in Teaching Children to Read Music With Shape Notes," published in JRME in 1960 but omits an article by Irving Lowens and myself, "The Easy Instructor (1798-1831): A History and Bibliography of the First Shape Note Tune Book," published in JRME in 1953 and which provided the basic information needed by Professor Kyme before he could conduct his experiment. Similar examples could be multiplied in the behavioral sciences. The values of applied research generally need emphasizing. However, I should think that the values of basic research, whether of a historical or scientific nature, need no less emphasis -- and possibly more. Certainly any definition of music education or of research in music education should provide for good research of all kinds.

An article by the present writer entitled "Research in Music Education" was printed in Education in September 1953. In this article, after discussing the typical classification of research as historical, scientific, or normative, and discussing the practical problems of each in so far as music education and music educators might be concerned, I discussed another consideration which still seems to me worthy of comment. Please grant me your continued indulgence if I quote from this article:

> Another special consideration relating to the problem of research in music education, a consideration which is shared with other teaching fields, though perhaps not to the same extent, is that the immediate products of our researches do not constitute our ultimate subject matter. Music education itself exists only in the actual situations where musical learning takes place. It is a practice rather than a body of knowledge. Contrast this situation with that of history,

> for example. History consists of the complete corpus of historical writing, and the historian in writing a particular bit of history makes his ultimate contribution to history itself. Physics consists of the sum total of knowledge concerning the functioning of physical events. When a Mr. Einstein publishes a new series of formulas, he has completed his duty. That all derivations of history, physics, or other liberal arts and sciences may be related eventually to practice does not put aside the fact that the subjects themselves consist of the knowledge about them. But a history of music education, or a new aptitude test, or a study of the types of programs played by high school bands -- such studies as these are not music education: they are only commentaries upon it or devices designed to further it. Thus, one who pursues researches in music education is by the same token placing himself in a position once removed from his subject matter. Furthermore, practicing music educators will not wait with a kind of breathless eagerness to learn the results of his labors as,let us say, the medical profession waits upon the results of the newest laboratory experiments. The art of teaching, and especially the art of teaching music, is learned by apprenticeship technics and is practiced largely upon the basis of opinion, experience, and intuition. We cannot expect that research in music education will ever have the same function or importance as research in fields in which it is a virtual end in itself."

If this point of view has any validity, then we should be all the more careful not to restrict the scope of our definition of music education or of what is to be considered relevant research in music education. Another more practical consideration gives support to this point of view, in my opinion. College level music educators, those who are responsible for the undergraduate and graduate preparation of school music teachers, are now generally expected to complete the doctor's degree as the minimum educational requirement. Doctoral programs as presently administered throughout the United States require the presentation of a research report commonly called the doctoral dissertation. Unless we adopt a definition of music education broad enough to allow for any possible development in the field, we shall inhibit ourselves dangerously. To adopt the Schneider-Cady definition and its implications as realized in their final report would be to require that all music educators become behavioral scientists. To do so would isolate and perhaps alienate us immediately from our colleagues in other areas of musical activity as well as from the community of humanist scholars in general. I believe also that to do so would decrease the number and quality of persons seeking doctoral degrees in music education since it has been my experience that comparatively few musicians have a natural aptitude or inclination for the behavioral sciences or for the research technics needed to further knowledge in these fields.

It seems to me that we should try to think of the music educator, not as a human being apart from all other educators and all other musicians, but rather as a musician who happens to be engaged primarily in directing the musical activities of the young, or of other learners no matter how young or old, inexperienced or experienced. Thus, the problems that Eugene Ormandy experiences in trying to get across a certain musical concept to members of the Philadelphia Orchestra are properly problems of music education. The test of whether a musical activity is educational or not should be simply whether or not it involves learning on someone's part. It is the learning and teaching of music with which we should be concerned.

A single musical human being can be considered at one time as a music educator, at another time as a professional musician, at another time as a critic of music, and still another time, perhaps, as a musicologist. Whether he is one or the other depends upon what he is doing rather than what he is. And so the definition of music education should not seek to establish what music education is but should be used simply to designate those activities which have to do with learning or teaching music. Further, it seems to me that research in music education should not be restricted to research carried along the lines of the behavioral sciences solely but in addition along any honest and thorough line of investigation. There are many. The types of research outlined in the mimeographed glossary sent out to each of us by Professor Cady is admirable in its breadth.

I look forward to our coming discussions, when we can explore the great diversity of areas in which research is needed. May I conclude by suggesting that hitherto neglected areas are those of exotic musics and of foreign music education. Our children will spend their lives in a much more international culture than the one in which we grew up. We need to study exotic musics in order to find materials suitable for use in our schools, materials that may enrich our musical lives as well as our social vision and our human sympathy. In addition, of course, we need to continue to study the psychology of children and of teachers, the social environments in which music exists, and music itself, particularly that most suitable for learning.

MUSIC EDUCATION: DESCRIPTION AND DEFINITION

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The task of preparing a critique of the "definition of music education,"as set down in the research study which brings us together today, is certainly not to be undertaken lightly. It is never easy nor painless to parade before one's self his temporary certainties, beliefs, and viewpoints, and yet separate these from his wishes. One's subjective pets are often blinded in the bright light of objectivity. Yet I welcome the opportunity, because such a merciless invoicing brings much learning. The very act of calling to mind what is known always brings more knowledge.

Professor Cady has stripped many of the obstacles and difficulties from our assignment by his scholarly discussion of what music education might or might not be. He has lined this cognitive pool of ice water with a hundred spring boards -- we can take our choice. But, as I tell my precomprehensive students, "You may choose any theory or intellectual stance you wish -- just be able to defend well whatever you choose." And this I understand to be my chore -- to choose and to defend.

I propose to do this by following closely the order of Professor Cady's delineation, Toward a Definition of Music Education, which you have read and may have before you. Certainly I will not discuss every point, only those which I feel may elaborate our discussion and which will make evident my several points of view. This will be done with the aim of laying a firm foundation for the final statement of definition.

Certainly the meanings of words and terms change, but the changes are not evenly accepted. Some persons are not even aware of changes. By some, the changes are thought to be worthless; by others, the changes are unduly magnified. The training, background, and conditioning of music educators have been so different that precise agreement is difficult. Certainly the profession of a music educator is far broader, and yet more discrete, than it was formerly. Let me illustrate: When I began graduate study I was the only music educator who wanted a course in statistics. I found myself in a class consisting entirely of mathematics majors, excepting myself. This is greatly changed now. Another example: More than one dean of a school of music has told me that "only over his dead body would music education be taken from his complete control." On the other hand, the school of education is the professional school for the training of teachers. Music is no more mysterious or abstract than, say, mathematics; yet, ordinarily, departments of mathematics do not ask to train their students for the actual science and art of mathematics education.

I bring these examples to your attention for illustration. Our attitudes, pro and con, toward them may well be, in fact must be, the results of our various conditionings. Words and terms, their meaning and aura, will change or not change only as our experiences dictate. We all look out at the world from our own private, enculturative cage. Whether or not the term 'music education' symbolizes a distinct category in general usage depends on who is making judgments. For me, there is the distinct entity of music education.

Music education includes many functions and many persons. The end to which these functions and persons are directly and specifically aimed seems to me the key thought -- Professor Cady's "implicit variable." The greater part of the scope of music education is not questioned, I think. And its more precise delimitations shall be and can be determined, I believe, by its overriding purpose.

Parenthetically, the terms, 'school music' and 'public school music' are outmoded because they bespeak several courses in techniques of teaching rather than the essential attitudes and inclusiveness of 'music education'. Undoubtedly we are beating a dead horse, because a few people now receive the B.S.M. or the B.P.S.M.

I agree that the greater part of music education, as it is now practiced, consists of performance. I wish it were not so. I wish it were not so for several reasons but especially one: the cognitive adds to the feelingful, the aesthetic, but there is too little time for the cognitive, particularly at the secondary level. As I see it, the true spirit and purpose of music education would never put music performance first. It only seems to be first. It is the end which performance serves that is first.

In his discussion of the Psychology of Music, Professor Cady is indeed generous in his inclusion of what is taught and studied in the typical psychology of music class. It may be that he conceives Psychology of Music to be a much larger umbrella than exists. I agree with such a conception, but not with typical conceptions of Psychology of Music which are generally restricted to acoustics.

If music is a form of human behavior, and I believe it is, then we could benefit much by adopting many of the procedures and methods of the behavioral sciences. The practice of music education is both a science and an art. But before the music educator can adopt behavioral procedures he must have at least a superficial knowledge of the behavioral sciences, and this I think he does not have.

The behavioral sciences, except for political science, are sociology, psychology, and anthropology. All the representatives of these disciplines that I know of believe that music is a social phenomenon. It is nonverbal communication of a unique and powerful influence. Music education can learn much from the behavioral sciences. I shall say more of this viewpoint later.

I think I must disagree with the impression I got of the great similarity of art education and music education. True, they are partially alike. What about dance education? Music is the most abstract of the arts. Music ordinarily is peculiarly and completely dependent on hearing. No other art is. There is no such thing as the "startle effect" in other senses. In L.S.D. therapy there are striking differences between visual and auditory distortions. Visual forms and colors are commonly distorted, but never music. The loudness level seems too great, but nothing else is distorted. Objects occupy space, events occupy time. Music does not have mass, but it does have structure, albeit sequential. Because we consider music qua music as human behavior, then I must argue that music does have structure.

I agree that, "The basic concern of the music educator is how to teach music so that information and aesthetic experience result in concepts of what music is and in the love of making music." I furthermore agree that the intersection of "Teaching-Learning" and "Information-Performance" provides the focal point of the process of music education. I do doubt that the information alluded to in both of the preceding statements is as inclusive as I would wish it to be. I would not be satisfied unless such information included the functional aspects of music. I would want, for example, to know why a lullaby puts a child to sleep, why march music has certain characteristics, and why in all cultures music and religion go hand in hand. I think it is one of the glaring weaknesses in music education that so many know so little about the functionality of music. I do not allude to mysticism -- there is none in music -- but to easily observable phenomena.

I am particularly concerned with the kind of information just discussed because, regardless of protestations, music is for people. This must be well understood. Music is a folkway. Each music serves best the occupants of its cultural matrix, just as a language is the best language for the culture in which it exists.

The teacher stands at the nexus of the "best music" and the standards of the community. He must not lose contact with either. Above all, he must be able to set musical models. How else will his students learn that which is the essence of nonverbal communication, and which leads always to greater profundity of aesthetic experience.

Surely music education is a "purposeful activity." Its purpose is its most distinguishing characteristic. "Purpose" is the strong silken cord which binds together in function the related conglomerate which eventuates in music education. Music education is the action of passing through a continuous development to a planned and long-contemplated objective. If I were forced to name one word which most nearly represented, for me, what that contemplated objective was, I would say Humanness, in its most contributive, and profound meaning.

But this process toward humanness must be focalized in the classrooms of elementary and secondary education, and in those departments of higher education which prepare music educators to engender music education at any one or more of the three levels.

As for the three objectives of music education advanced by Professor Cady -- (1) transmission of musical heritage, (2) acquisition of musical skills, and (3) the development of aesthetic sensitivity -- I must again insist on a fourth objective, knowledge of the functionality of music or the influence of music on behavior, if you please. To understand music from an anthropological viewpoint is not only fulfilling but a real essential for music education in this closing twentieth century. And besides, we are brought more fully to the understanding of our fellowmen wherever they may be. Along with all of these requirements the music educator must be a good musician, able by good use of models to demonstrate musically that which needs demonstrating, be it the most lyrical passage or gutbucket honking, and he must know why.

To the admirably detailed list of constraining factors of the teacher-learning process, I believe we must add one other factor of extreme importance -- the preschool sensory and musical experience of each child. We must begin to do this now. There are scores of pieces of research that demonstrate the irreversible effects of sensory deprivation.

Reference was made earlier to the similarity of the processes of music education and the behavioral sciences. In both, the chief concern is resultant changes in behavior due to (1) selected stimuli or (2) the reverse of this, the tracing of significant stimuli by observation of behavior. I now suggest that music education has been significantly dilatory in the use of the behavioral sciences, and many times has ignored pertinent and helpful data from the exact sciences. It is not proposed at this time to submit a list of examples. That can be done later, if it is necessary.

But, you may say, this is not music education. Yet biochemistry becomes a tool of medical research in study of, for example, ribonucleic acid, hematological problems, and the research is properly medical research and medical education. Physics is used as a tool by medicine in the use of radio isotopes. Every electroencephalogram and electrocardiogram is the result of medical procedure and research although the dominant phenomenon is electricity. It is evident that this list could be extended to great length. The point must be emphasized that this is medicine, medical research, and medical education, not biochemistry, physics, and electrical engineering. But consider further: these were purely medical problems.

Where would physical anthropology be without the radiocarbon method of establishing dates and age? Only a few years back, hematology depended largely on morphology; now it is nearly exclusively dependent on biochemistry. It is presently agreed by many psychologists and physicists that the final proof of precognition will be dependent on quantum physics, particularly the behavior of subatomic particles.

I now ask you to consider the proposition that music education should utilize other disciplines, when indicated, to solve problems, clarify conditions, and to facilitate the processes of music education. It will be music education, however, only when the problem or process is music education, and the other discipline is only the tool. It will not be music education when the problem is not clearly one of music education. Music educators have gone into other fields for their graduate research because no research was being done in those other fields. Let there be no misunderstanding; the problem must be clearly and precisely music education.

Musicology is not music education unless it becomes a tool, a means for exemplification. The history of an instrument is not music education unless it functions as a means to clarify. In short, when the problem is quite clearly in the field of music education, let us be multi-disciplinary in our approach. We will enrich ourselves and our students immensely in so doing, as long as we are patently and plainly carrying on the processes of music education.

And now, to summarize my viewpoints, the following is a definition of music education as I would revise it: Music education is the practice of, the participation in, and the study, by whatever means or discipline, of the process involved in the teaching and learning of music within the segments of educational institutions devoted to furtherance of elementary and secondary educating in order to fulfill four fundamental objectives, namely, (1) the transmission of the cultural heritage of music; (2) the enculturation and acculturation of the individual in his musical environment, and to the musical environments of his fellow men; (3) the development of the individual's aesthetic sensitivity; and (4) the accretion of knowledge of the functionality of music as a form of human behavior, as these may be achieved under the influence of constraining factors.

I have broken this overly-long paragraph into sentences: Music education is the practice of, the participation in, and the study, by whatever means or discipline, of the process involved in the teaching and learning of music. This process is carried on within the segments of educational institutions devoted to the furtherance of elementary and secondary education. The process of music education has four fundamental objectives: first, the transmission of the cultural heritage of music; second, the enculturation of the individual in his musical environment and his acculturation to the musical environments of his fellowmen; third, the development of the individual's aesthetic sensitivity; and fourth, the accretion of knowledge of the functionality of music as a form of human behavior. Always, there are constraining factors at all four levels where the processes of music education are carried on.

MUSICOLOGICAL RESEARCH AND ITS RELATION TO RESEARCH IN MUSIC EDUCATION

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Recently I attended the meetings of the Eastern Division of the Music Educators National Conference in Boston, Massachusetts. I listened to the speakers in the Higher Education sections, the sessions of the Society for Research in Music Education, and I heard the addresses delivered by Harold Taylor, Charles Frankel (U. S. State Department), and Charles C. Mark (National Foundation for the Arts) -- all having to do with the arts in education. I came away with the feeling that the climate is right for a conference such as this, because we have such a tremendous task and, I might say, opportunity to improve the role of the arts in American education, an improvement which in the end will come about largely through research and experimentation. The challenge of educating today's youth and of improving teaching in the arts to a point already achieved in other areas such as mathematics, modern languages, and the sciences, may indeed provide us with the stimulus to carry our discussions through to conclusions which will have impact not only upon research in music education but also upon the entire realm of education in the arts.

I must say at the outset that the word 'musicology' does in fact equal research, and let us be clear about the precise meaning of terms we are using. The Oxford Dictionary traces the term 'research' back to the French 'recerche' used in 1539.[1] The modern French, of course, would be 'recherche', and in Enghlish we have the word 'search' plus the prefix 're', collectively meaning "...a search or investigation directed to the discovery of some fact by careful consideration or study of a subject; a course of critical or scientific inquiry." Going beyond this definition, the National Encyclopedia gives the following definition, formulated by Samuel Robinson Williams, Professor of Physics at Amherst College:

> Research is work done in solving or attempting to solve an unanswered question of material fact. It involves original work and is essentially the collection of data that are not a part of current knowledge. Research may be conducted in the pure or applied sciences or in engineering, in which cases new facts are obtained by technical experimentation; in the field of the arts, which involves the study of old works of art or literature; in the field of the natural sciences, such as geology, which involves the study of naturally occurring phenomena; or it may be statistical research, which is a compilation of existing data from varied sources.[2]

And so 'research,' in the last analysis, is an investigation, a critical inquiry, a scrutiny, and a search for truth. Now, to musicology!

In our time no musical term has been more misused, more misconstrued, more abused, and more bandied about than the term 'musicology.' While in its narrowest sense musicology is simple to define, deriving from the French 'musicologie', denoting the scientific study of music and from the German 'Musikwissenschaft' (the science of music), it is in its broadest sense a complicated and difficult term to define.

A great German scholar of the mid-nineteenth century, Friedrich Chrysander, introduced the use of the term 'Musikwissenschaft' in 1863, using this term to emphasize that musical studies, especially in the field of history, should be raised to the same level of seriousness and accuracy long adopted in other fields of knowledge, in the natural sciences as well as in the humanities.[3]

Another noted German scholar, Guido Adler, one of the pioneers in music study at the end of the nineteenth century, stressed the fact that a central focus in musicology is in the discovery of the unknown and the obscure. Adler included in his early discussions such topics as paleography (musical notation), aesthetics, acoustics, history, harmony, rhythm, melody, counterpoint -- all to be related to the general subject of musical research.[4]

Waldo Selden Pratt, in his early article (1915) entitled "On Behalf of Musicology," said:

> Musicology must include every conceivable discussion of musical topics; the whole body of systematized knowledge about music, which results from the application of a scientific method of investigation or research, or of philosophical speculation and rational systematization to the facts, the process and the development of musical art, and to the relation of man in general (or even animals) to that art.[5]

Notice the fact that this early definition dispels the notion that musicology relates only to old or early music, a common misconception.

Later (1939), in an article entitled "Musicology," printed in the Thompson International Cyclopedia of Music and Musicians, the distinguished scholar and teacher, Otto Kinkeldey, often called the "father" of American musicology, wrote:

> Musicology unites in its domain all the sciences which deal with the production, appearance and application of the physical phenomenon called sound.[6]

Examination of early usage of the term 'musicology' shows that while definitions of the term differ in some detail, they all seem to stress the scientific approach to the study of historical and other phases of musical evolution. This undoubtedly happened because late nineteenth century scholars were endeavoring to secure for the serious study and investigation of music in all its aspects, including research as we have defined it, a position comparable to that held in institutions of higher learning by other academic disciplines. Let us recognize that music *per se* is not an academic discipline but an art; for the purposes of our discussion, let us say that it is the academic discipline of research in music with which we are at the moment mainly concerned. It seems to me, too, that research in music must include music education. It is no longer essential to belabor the use of the term 'scientific' in relation to musicological studies, because the scientific method in musicological research can now be taken for granted. A survey of American colleges and universities will show in their course offerings to what extent musicology has been accepted as a respected and legitimate field of study along with other disciplines. The number of institutions offering the Ph.D. in musicology is in itself indicative; it is clear that as of the mid-point in our twentieth century, musicology has in fact become a standard curricular offering in large European and American universities.

Research activity, the main function of musicology, has probably been as much misunderstood as has the term 'musicology' itself! An example of this may be observed in an article entitled "Reflections on Music and the Liberal Arts" by Lothar Klein:

> Professional music students, particularly on the graduate level, must be taught to see more in musical studies than statistics and tomes of research. The increasing number of Ph.D. candidates righteously believing music was composed solely for research or bibliographers, threatens to emasculate musical studies for good; novitiate Ph.D.'s are becoming like those members of Hermann Hesse's Glasperlenspiel society who are rewarded with a glass bauble for every fact accumulated, where information is equated with virtue. To assume that factual musicological knowledge is the essence of music is tantamount to glorifying the Encyclopedia Brittanica as literature. The moment is ripe for an American brand of musicology to blow fresh air into the asphixiant carrels that 19th century European musicology has contributed for us.[7]

This statement is thoughtless and a bit unkind. Every thinking musician knows that music's most distinctive and unique attribute is its completely non-verbal character. Therefore, most of us do not in fact confuse the issues. We know that to read about music, to talk about music, to analyze music, to carry on research in music, and even the creative act of composing music are not to be equated with music itself. It is this very non-verbal quality of music that has caused an interesting analogy to be made with language and that has led to the use of such trite expressions as "music, the language without barriers" or "music, the universal language." And one of the silliest quips I have run across defines musicology as "Words Without Song." I think it is an acknowledged fact that American musicology owes a great debt to European musicologists, especially to the many European scholars who came to live and work in our own country. It is from these European scholars, principally, that we have learned the techniques and principles required to carry on worthwhile research in music.

Genuine musicologists do not consider that music was composed merely to provide an exercise in research or working material for bibliographers. But where would other humanistic studies be today without the disciplinary aspects of research or without bibliographers?

In 1941, Glen Haydon wrote:

> As all knowledge depends on direct awareness, intuition... and reflection, so musicology depends on direct musical experience or an immediate sensitivity to musical values, and the application of scientific methods in the discovery and organization of whatever we may think we can know about music.[8]

One of the last contributions made by Manfred Bukofzer prior to his untimely death in 1955 was his eloquent monograph, "The Place of Musicology in American Institutions of Higher Learning," a study sponsored by the American Council of Learned Societies and printed in New York in 1957 by the Liberal Arts Press. And so, more than ten years ago, in this document, Mr. Bukofzer, a truly humane scholar if ever there was one, wrote:

> Knowledge of and about music cannot be separated. The goal of musicology is to understand and to intensify the aesthetic experience. Attitudes toward music are not historical constants, and the musicologist, too, is a child of his time![9]

Mr. Bukofzer also paid us a compliment:

> It may proudly be stated that the young generation of American musicologists so far produced will stand comparison with that of any other nation.[10]

This from one of the European musicologists who came to work and teach in our country and who was respected and admired by students in institutions everywhere from New York to Berkeley.

A true musicologist is a humanist scholar, and part of the role or aim of his research is to systematize and organize information pertaining to our vast musical culture of the past; to examine it, to evaluate it, and to make it available for contemporary society. In the light of past experience we will better be able to judge and criticize activities of the present.

The results of research in musicology have importance for everyone concerned with music; for the layman, the performer, the composer, and the educator or teacher. And implicit in this statement is the fact that research in musicology relates broadly to the field of music education.

Mr. Bukofzer, in the monograph to which I referred, said also:

> The study of musical styles is the most important part of the broad subject-matter of musicology. Concentration on style means concentration on the music itself. The musical principles that have activated the styles in music history can be extracted only by historical analysis.[11]

I think this statement would meet with general acceptance among musicologists today, and it serves to illustrate further my point that the so-called "drudgery" of research is not to be carried on for its own sake, an activity for which musicologists are commonly criticized, but rather to illuminate the ancient art of music, to enable us to enjoy the great masterpieces and miniatures of the past and present, and to listen with greater perceptivity and response.

Glen Haydon made a distinction between Systematic Musicology and Historical Musicology. Under Systematic Musicology he included acoustics, physiology and psychology of music, aesthetics, theory of music theory, music pedagogy, and comparative musicology; under Historical Musicology, he included philosophy of music history, sources of music history, and problems and methods of historical research in music.[12] This approach, though very broad, is still a legitimate and sound introduction to musicology.

I would like to quote again from Mr. Bukofzer's monograph:

> Actually, musicology presupposes a liberal arts curriculum in music, to which it is related as a comprehensive method is to its subject matter. The scholarly study of music... this is the briefest and least pretentious definition of musicology...embraces all aspects of music and is therefore not an isolated field but an encompassing approach through

> which one may make close contact with any musical manifestation. It is consistent with this definition that musicology is a specialized pursuit or field only insofar as this approach may become the subject of a special study.
>
> With regard to the four areas of music instruction (performance, history, theory, music education), the encompassing nature of musicology means that the discipline formulates and furnishes the underlying ideas and principles which tie the separate areas together into a whole. Thus, it is clear why it would be a mistake to advocate that musicology be added to the undergraduate college as an area additional to the existing four. To institute a course in undergraduate musicology would mean that the student would be attempting to take the second step before having taken the first.[13]

On the subject of *Musical Scholarship and Science*, Mr. Bukofzer said:

> The scholarly study of music requires the same methods as any other humanistic study. Its main tool is the historical method. Being a humanistic discipline, musicology is qualitative research and can never abandon qualitative judgments in favor of quantitative data.
>
> There has developed a school of thought which insists on the scientific approach and will accept only statements that can be verified objectively by measurement and other quantitative methods developed in the natural sciences.
>
> It goes without saying that marginal areas of musicology such as acoustics and tone production rightly apply the methods of natural science, being part of it. But acoustics is the science of meaningless sound! Music is a product of art, a man-made object, and not an object of nature.[14]

A more recent treatment of the subject is the 1963 publication, *Historical Musicology: A Reference Manual for Research in Music* by Lincoln Spiess.[15] This work includes three appendices which are most helpful. They are: "The Development of Modern Musicology" by Ernst C. Krohn, the most complete survey of the topic I have found; "The Doctoral Dissertation in Music" by Lloyd Hibberd, an excellent discussion of the types and range of doctoral dissertations; and "Language and Musicologist" by Luther A. Dittmer. Spiess's book will prove of inestimable value to anyone interested in preparation for serious research in the field of music.

It is generally conceded that musicology as a major field of study must exist in a graduate curriculum and that all of the music courses in an undergraduate curriculum, including performance, are, in fact, preparation for musicology. Furthermore, it must be conceded that the best undergraduate preparation for musicology is to be obtained in a liberal arts curriculum, since musicology is a humanistic study and requires broad knowledge in many fields. It requires background in history, psychology, languages, and other cultural fields.

Mr. Bukofzer said:

> Music as a liberal art must be seen as a manifestation of the human spirit, as part of the history of ideas. Music reveals to us man's inner life; its scholarly study is therefore of immediate practical use.[16]

Research in musicology has opened to us the field of paleography. We are now able to transcribe early manuscripts and study the art music of the Middle Ages. Musicology has made it possible for us to study the performance practices of various periods of music history. It has revealed to us a great body of musical literature heretofore unknown; it has taught us the stylistic and interpretive principles which prevailed throughout the various eras of music history. Thus, we are today able to perform and interpret with greater insight, accuracy, and precision the music of the Renaissance, the Baroque, and the Classical periods. Research in musicology has brought forth the publication of great quantities of music from the past in modern editions and has led to an enormous increase in the availability of recorded music from all ages. This has served to widen our musical horizon. Research into the acoustical properties of sound and its production has contributed to the development of musical instruments and has been of aid in the construction of concert halls. Research into the physiological and psychological aspects of music has given assistance to both singers and instrumentalists in solving innumerable problems connected with performance. Questions pertaining to the aesthetics, philosophy, and criticism of music have preoccupied scholars from the time of Pythagoras to the present day. Continued research in theory and acoustics may open to composers even more startling possibilities than have been revealed by the avant-garde of our own time! Investigation into non-western musical cultures, carried on in the late nineteenth century and early twentieth century under the heading of comparative musicology, has now led to a new branch of musical study, ethnomusicology. The main developments in this branch of musical research have taken place since World War II and embrace the study of non-western and folk cultures. Ethnomusicology is related to the individual disciplines of anthropology, folklore, sociology, linguistics, psychology, and musicology itself. Folklorists and folk-singers will find the subject of interest since it deals expressly with the question of music in culture.

Music education today has a great opportunity to redefine and establish the place of music in our culture as we enter a new era of the arts in society. In the past few years a good deal of thought has been given to the status of the arts in American education. Attention was brought to this subject in 1963 when August Heckscher, who had been appointed by President Kennedy as Special Consultant in the Arts, submitted his outstanding report along with his resignation. Many of you are familiar with the content of that report, a masterpiece of its kind, and a document which served to point up the inadequacies in our then existing efforts to encourage artistic excellence. We have made some progress since that time, but the wheels grind slowly. The report offered detailed recommendations for improvement in all fields of artistic endeavor and accomplishment. Mr. Heckscher especially concerned himself with the need for improving aesthetic appreciation in the arts and with the need to assume a more sharply defined responsibility to the arts. Under "Education, Training and Research" Mr. Heckscher wrote as follows:

> At present, the arts are given a low priority, or are even excluded in most educational and training programs.
>
> It is recommended that further consideration be given to increasing the share of the Federal Government's support to education which is concerned with the arts and humanities. This should include the same type of across-the-board assistance now given to modern languages, mathematics and science; for example, facilities and equipment, teacher training, teaching techniques and materials, scholarship and fellowship programs. The predominant emphasis given to science and engineering implies distortion of resources and values which is disturbing the academic profession throughout the country.[17]

In a recent editorial Richard L. Coe, drama critic, said that the past two years of the Johnson administration have brought more White House attention and action for the arts than any period during any administration since the Presidency began. Mr. Coe goes on to say that "ten years ago, even six years ago, present actions of the Federal Government in the arts would have been considered the wildest daydreaming."[18] Mr. Coe does not credit President Johnson personally for this progress. He traces the beginnings of this movement back to the Eisenhower administration.

With the passage of the Elementary and Secondary Education Act, the establishment of a Division of Arts and Humanities in the U.S. Office of Education, the establishment of the National Foundation for the Arts and Humanities, and other agencies through which funds have been made available for the improvement of existing programs and the development of new and experimental programs in the arts, a substantial amount of money is now being spent. This is still but a fraction of the amount of money spent on science, but it is nevertheless a beginning in the direction of achieving some of the objectives outlined by Mr. Heckscher.

The important question which music education must now ask itself, in my opinion, is whether or not it is really succeeding in improving aesthetic education in music. Directly related to this question is our ability to produce future consumers of music, that is, intelligent listeners who will become our audiences of the future.

I believe that music education should rededicate itself to the teaching of music as an art and as a part of general culture. It should be taught as a study which has value for its own sake, a value which grows out of the music itself. And once and for all, it must be learned that music, like any other humanistic study, can be learned only by sustained and concentrated effort. Music teaching should evoke in young people aesthetic response to creative expression. Appropriate learning experience in music and the other arts has something to contribute to the personality development of our youth. This concept of music education as a part of man's general learning is nothing new. It dates back to the time of Plato and Aristotle. It was part of the idea of Renaissance man that all educated and cultivated persons should know something about the art of music. This liberal or humanistic approach to the teaching of music in the schools then becomes the responsibility of music education and points up the distinction made by Mr. Bukofzer between "education in music" and "education for music."

In relation to this liberal and humanistic approach to the teaching of music, musicology does have something to contribute to music education. Research in music education should help correct our failure to place sufficient stress upon the aesthetic value of music as an art. It should also strive to improve continuity in the teaching and musical experiences of young people throughout the gamut, from kindergarten through college or university. Too many students who have been subjected to years of music study fail to acquire understanding of the true essence of an art work, to develop some sense of discrimination or some degree of artistic taste and judgment.

This is due in part, at least, to our failure to communicate, that is, the failure of all who are involved in the teaching of music -- public school teachers, private teachers, college or conservatory teachers, and musicologists. We have remained quite aloof from one another, and the famous Yale Seminar of a few years ago brought attention to this circumstance.

It has now become apparent to most people that music education is everybody's business. And we seem at last to be moving in the right direction. The American Musicological Society, the College Music Society, the Music Teachers National Association, the National Association of Schools of Music -- all have committees on music education. If we are to serve the best interest of music on the one hand, the best interest of our youth on the other, then we must have a better scholar-teacher-performer relationship than we have had in the past! Articles now appearing in the Music Educators Journal and other music publications indicate that music educators are beginning to think in terms of qualitative rather than quantitative factors in music education. Music teachers are tired of playing the role of the town clown! They wish to be taken seriously, though many, of course, are responsible for their own demise. Some music teachers have misunderstood their role and have failed to meet their commitment to the masses whom they teach. You all remember the slogan, "Music for Every Child." Idealistic to be sure, but we never had music for every child. We have had entertainment for every child, much of it contributed by bands, choruses, musical comedy troupes, etc. I believe in performing groups, but I also believe these groups should put students in touch with the finest literature music has to offer, not the poorest. High school students particularly should have a chance to make contact with literature in music which is comparable in quality to that presented in English literature classes or in other respectable courses of study.

Albert Christ-Janer, Dean of the Art School of Pratt Institute, spoke for all the arts when he made the following statement:

> Throughout American history art has been incomprehensible to most educators. Maybe this is one of the main reasons why daubers of incomprehensible canvasses are hailed as artistic geniuses, why screechers and shriekers who cannot stay in tune top the hit parades, why dismal boxlike buildings are considered great architecture, why booby-trap chairs are considered suitable for the decor of many households and why workers will tolerate uniform drab color, usually bilious green to dominate the surroundings where they labor eight hours a day. If we can improve teaching standards in the arts and can take those with artistic appreciation, including teachers, off the defensive, we will be adding substantially to the national heritage.[19]

Many years of experience with graduate students in the field of music education have shown me that the most striking deficiencies in the preparation which they bring to graduate study are first, a very limited knowledge of music itself, often manifesting itself in abysmal ignorance of music in their own medium of expression. Second, these people, mostly young teachers, have little or no knowledge of the literature available about music, even literature pertaining to the field of music education. In a library they are completely lost. They cannot find their way around; they do not know how to use catalogues or indices, how to organize a bibliography in preparation for investigation of a given topic, how to use dictionaries and encyclopedias as opposed to periodicals and books. In many instances these same people, talented and bright though they be, do not know how to outline for a given study, how to arrange a formal paper, how to document their study. Yet, these are the people, in many cases, who are knocking at the doors which lead to research and to the doctorate in music education. They are not less gifted than people in other fields. They are less prepared. Musicology relates to this problem, because a well organized and well taught course in methods and materials of research leading into musicology gives basic preparation needed for research in any field of music, including music education.

Research in musicology has resulted in the availability of a wealth of music in all media of expression which could be used in the schools. Much of this music is now published but remains unknown to many teachers who on their own do not seek out new music. Research in music education could render a great service in upgrading the quality of music made available to teachers by evaluating, adapting, and grading the great quantity of music, old and new, flooding the market today. In addition to this, the tremendous increase in the availability of recorded music of all types from all eras makes it possible for us to broaden greatly our musical insights.

One encouraging happening in music education is the recent emphasis in some schools upon the development of small performing ensembles. Considering the opportunity this activity provides for learning musical values as opposed to the sometimes futile effort to have an orchestra, it is surprising that the idea of the ensemble did not take hold sooner. History shows clearly how the orchestra grew from small ensembles.

It is also curious to me that so little has been done to make historical knowledge about music available to junior and senior high school students in terms which are intellectually, aesthetically, and musically adaptable to them. It must be that music teachers themselves have not wanted this and have preferred to use their time for other purposes. I would like to illustrate by describing a project in which a graduate student of mine is currently engaged. She has been collaborating with a Ph.D. candidate in history in writing a book entitled A Chronicle of Man and His Music. A portion of the book has been completed and it has been accepted for publication. At my request, my student provided the following statement:

> Mrs. Wolf and I first realized the lack of any adequate material relating music to the general development of history when we began graduate work in our respective fields. Since we found no books which did a good job of placing music in its context for the general reader, we fell into the habit of trying to supplement each other's knowledge through discussion. In the course of these conversations we came to realize how this approach would be a wonderful introduction for children into the field of music. More than music appreciation, more than the lives of the composers, a uniting of music with the social, political and cultural time of its creation could give the child a frame of reference in which to place the sounds he hears.
>
> Our aim, therefore, in A Chronicle of Man and His Music, is to present the development of music in history from earliest times to the present, stressing major trends in as interesting a manner as possible. The book is geared to children twelve years and up. Our training in methods of research is enabling us to make the utmost use of primary source material. We hope, in this way, to give our book a truly fresh approach of both information and presentation.
>
> One element of presentation has seemed important to us from the very beginning. We feel that the reader should have the opportunity to hear the music he reads about. For this reason we are most interested in having the Chronicle accompanied by selected recordings. While we have run into some technical difficulties in accomplishing this, we are still hopeful that it can be worked out.[20]

Besides the facets of research I have already referred to, there remains one very important function of music education which I believe research must help teachers to do more effectively. This has to do with the specific discovery of musical talent and its development. Research in music education, through its findings, should enable teachers to develop the insights and understanding needed to detect and direct unusual talent.

Finis E. Engleman, in a talk entitled, "Some Views on the Arts and American Education," said:

> Although I believe in an education of breadth as well as depth of specialization, I would make a plea for recognition of diversity of both interest and specialized talent and aptitude. Too many sensitive, specially talented pupils driven by deep emotional interests are forced to jump ropes, drive their hoops and swing from trapezes in a whole series of respectable disciplines that destroy impassioned interests and dull or frustrate the emergence of true creative genius of a special character. Too much of our curriculum, too much of our methods and materials, too much of our contemporary philosophy would make for conformity rather than diversity; would put labels on all rather than put supreme value on the unique.[21]

Not only have we failed to provide adequate aesthetic education for our youth, but we have failed also to provide opportunity for the development of such exceptional talent as Dr. Engleman describes. Artistically talented students have always constituted a waste element in our secondary school system. It is now time to establish the fine and performing arts as pursuits worthy in their own right, and our country is becoming aware that something must be done about the numerous young, talented people in our society who are trying to realize their artistic potential. It is our responsibility to provide conditions which will enable these young people to pursue creative activity with a feeling of stability and confidence.

In summing up my position on the relation of research in musicology to research in music education, I repeat that it is virtually impossible to think in terms of two disciplines, one for musicology, another for music education. Research in music education, if viewed properly as belonging in a graduate program, should or might be considered a branch of musicology. Basic preparation for research in music should be common to all graduate students. After the student has received training in methods and materials of research, he should become involved in seminars in his special field, in this case, music education. And this is the point at which the graduate student will begin to apply research techniques in music education. It is my opinion that this concept and approach will lead to a greatly improved result in the end. Research in music education should filter down through all levels of music teaching, right to the grass roots. It will then establish for music its proper place in American education.

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RESEARCH IN MUSIC THEORY AS DISTINCT FROM AND AS RELATED TO RESEARCH IN MUSIC EDUCATION

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If there were any doubt as to the lack of clear lines of differentiation between research in music theory and in music education this lack can be demonstrated by calling attention to parallel issues of two journals. In the Winter 1965 issue of the Journal of Research in Music Education and in the Winter 1965 Journal of Music Theory articles appear which concern themselves with the use of computers in musical analysis. Although the articles differ in reported method and subject matter they are alike in purpose; each sets out to describe an experimental process in exploring the nature of musical compositions.

I do not mean to imply that one journal was in error in admitting a contribution which was alien to its purpose; on the contrary, part of my effort in this paper will be directed toward the contribution of theory research to education research. I do believe that an attempt to identify the proper category for the type of articles described may be a useful point of departure for trying to indicate the unique province of theory research and the ways in which it may best serve music education.

Let us examine some definitions of music theory. Halsey Stevens has characterized it succinctly as "the systematic investigation of music."[1] Allen Forte identifies two general categories of music theory, "the learning of skills related to the practice of music" and "advanced study and research in the structure of music and musical systems."[2] Forte's discussion of the proper place for emphasis on these two areas will serve as a helpful point of reference in separating and relating the fields of theory and music education. Also of interest are Palisca's four categories of music theory: practical, creative, analytical, and pure.[3] Practical theory, of course, concerns itself with comprehending technique as in melody, rhythm, counterpoint, and harmony. Creative theory might almost be termed "temporary theory," being the attempted codification of methods of musical creation while they are in the process of evolving. Analytical theory applies descriptive techniques to already existing music, and pure theory operates on a level apart from specific literature or creation or performance of music, relating instead to the application of a system of logic to music as a whole.

For the purpose of our deliberations here I should like to propose this definition. The term 'music theory' encompasses those processes and activities which are aimed at revealing the nature of music itself. These include: (1) use of verbal and symbolic communication systems ranging from descriptive terms and charts comprehensible to very young children, through conventional staff notation and traditional analytical techniques, to current applications of mathematical and electronic resources with their attendant terminologies and graphic representations; (2) cultivation of creative and performing skills not as ends in themselves but as means toward increased understanding; and (3) in conjunction with the first two, experience, through hearing, seeing, and performing, of a vast amount of music chosen with great care in order to provide insight into all significant types of literature and to identify the qualities which characterize a masterpiece.

As we proceed from this definition to identify the proper domain of research in music theory, I should like to quote the following, written by Milton Babbitt in an article appearing in the College Music Symposium:

> ...musical theory must provide not only the examination of the structure of musical systems...as a connected theory derived from statements of significant properties of individual works, a formulation of the constraints of such systems in a "creative" form (in that, as a language grammar does for sentences, it can supply the basis for unprecedented musical utterances which, nevertheless, are coherent and comprehensible), but -- necessarily prior to these -- an adequately reconstructed terminology to make possible and to provide a model for determinate and testable statements about musical compositions.[4]

Proceeding from my proposed definition of music theory and Babbitt's statement of its aims, I should like to attempt to describe areas of theory research in terms of the outline of research types provided in the Glossary compiled at Ohio State University and sent to us in November.

Under the heading, Descriptive Research, of the survey study type I should place studies of existing analytical tools; Jones's investigation of the multiplicity of harmonic analysis methods found in current textbooks comes to mind.[5] Another example would be a survey-comparison of the efforts to apply Schenker's conception of musical structure in the preparation of theory textbooks.

Descriptive research as interrelationship studies would be found in the realm of music theory in a project such as a proposal for relating an existing system of structural analysis to a parallel set of formulations aimed at guiding and controlling the creative process.

Descriptive research in the form of developmental studies might be illustrated by a review of the impact on scholarship in music theory of the formulation and dissemination of an influential new concept in, for example, the relationship of psychological pitch to frequency. Many other illustrations could be found for this and the two preceding categories; it is not my purpose to attempt to describe every topic or process which merits the definition "research in music theory" but only to cite a number of examples sufficient to provide a background when we turn to our main objective, relating theory research to research in music education.

Examples of Historical Research are particularly abundant in the field of theory. In the documentary category an especially appropriate example seems to be Arthur Daniels' study of the harmonic system of Francisco Salinas wherein he provides a detailed exposition of Salinas' work, relates it to work of other scholars in or near his time, reports on other investigations of Salinas' writings, and draws attention to the relevance of this material to experimental work in progress in our own time.[6]

Historical research through the presentation of artifacts is represented by such work as Albert Seay's critical re-working of the treatise, Expositio manus, of Johannes Tinctoris.[7]

Experimental Research is illustrated by the preparation and testing of such things as revision of the notational system or new methods of pitch nomenclature applied to the sightsinging process. It must be acknowledged that certain side effects belonging properly in the realm of music education will almost certainly be present here.

Philosophical Research as analysis applies, I believe, to the realm of theory research wherein an effort is made to formulate a general analytical theory pertaining to music of many periods and styles.

Philosophical research as criticism finds its place in the field of theory when evaluation is made of the effectiveness of two or more modes of revealing the inherent nature of music, as for example, a study of dissimilar methods for identifying fundamental elements in defining tonality.

Finally, philosophical research as speculation suggests Palisca's category of pure theory, a type of study he believes to be resurgent after a long period of dormancy. Palisca says:

> Works that deserve to be placed in this category are rare in the history of music. The Harmonics of Aristoxenus, the Harmonics of Ptolemy, the Micrologus of Guido of Arezzo, The Harmonic Institutions of Gioseffo Zarlino, the collected theoretical work of Jean Philippe Rameau, the Craft of Musical Composition, Part I of Paul Hindemith are outstanding examples of pure theory. After a long period of comparative stagnation in this field, it is today giving signs of restless and explosive activity.[8]

Palisca attributes this activity to the development of new modes of composition and notes that the new formulations are based on information theory, linguistics, formal logic, acoustics, psychology, probability theory, mathematical set theory, and, he implies, other bases.

With the exception of the example given for experimental research I believe that none of the types of theory studies described above encroaches upon the domain of music education research, since the efforts described are directed toward revelation of the nature of music, either by acting upon music itself or by assessing or proposing means of revealing the nature of music in a manner which does not relate to the interaction of teacher and learner.

Before proceeding with my attempt to establish what seems to me to be the most productive kind of link between theory and education research, I think it is important to make clear the point of view from which my thoughts emerge. First of all, I am in only a very limited fashion a practitioner in the field of research in music theory; I am to a much greater extent merely a beneficiary of that research. I am, in fact, a music educator whose subject matter is music theory as taught at the college level, and concerned with both of Forte's categories, the teaching of skills related to practice as well as advanced study and research in musical structure. Needless to say the members of our theory staff subscribe to the aim so well stated by Forte when he says:

> The study of skills and techniques that they (the theory faculty) organize and direct must be informed by the highest level of scholarship, for the task of leading students to an understanding of complicated art music requires a knowledge of the role of systematic generalization and a comprehension of the significant characteristics of musical abstractions and of symbolic processes in general.[9]

Doubtless many of you will have recognized the source of this quotation; it is from the publication entitled Comprehensive Musicianship which contains the position papers for and the report of the seminar on that subject sponsored by the Contemporary Music Project of the Music Educators National Conference in April 1965. Along with several other participants in the present conference I was privileged to attend that seminar. With the passage of time since the seminar, I find my thinking dominated more and more by a conviction shared, I think, by all of us, and again stated with admirable clarity in Allen Forte's position paper:

> ...the conventional separation of secondary school from college, and college from graduate school, may gradually become less distinct, until we have an educational continuum in place of a sequence of discrete steps. This implies that all professionals active in education must foster a sense of mutual responsibility if the aims which are stated...are to be more than mere cant.[10]

You are aware that currently the Contemporary Music Project is sponsoring Institutes for Music in Contemporary Education in five geographical regions of the United States. The sixth region, the Southwestern, will become operative in September, and the final piece of biographical information I feel obliged to give you is that I shall be program head for the institute involving The University of Texas and certain Austin schools. Small wonder, then, that I have approached this problem with profound concern.

In a recent article, C. Edward Brookhart of The University of Texas offers this definition:

> ...the subject matter of music education (is) the study of the conceptual models of all modes of musical thought, the form, range, and quality of musical experience made possible by these models, and their pedagogical manipulation.[11]

Combining this definition with Forte's concept of an educational continuum (which I think should extend from the child's earliest musical experience to the most advanced study) provides the basis for attempting to draw guidelines for the interaction of music theory with music education at all levels.

In the recommendations of one of the groups at the Comprehensive Musicianship Seminar, this statement appears:

> The most significant point to be emphasized here is that the pattern of music learning is the same at all stages of instruction, and that the process of differentiating significant structural relationships is fundamental to all levels; the only distinction to be made is that at lower age levels, or at lower levels of sophistication, these structural discriminations are less detailed. The educational process moves from the obvious and concrete toward the subtle and abstract.[12]

Certainly this is not a new idea, and there would be very little disagreement with it in any quarter. At the same time I, at least, am not aware of any organizing principle applied to a specific research area directed toward an orderly movement "from the obvious and concrete toward the subtle and abstract." Much research in music theory must, of necessity, work in a realm of verbal and symbolic communication which is to a greater or lesser degree beyond the understanding of practitioners in other musical areas. I think the need is urgent for a clearly defined research area dedicated precisely to taking new insights achieved in the higher realms of theoretical speculation, experimentation, and investigation and assessing their applications to the music education process in order to convert their essence to forms capable of direct application at various levels of the teaching-learning process. I think, moreover, that we should be alert to identify young scholars particularly gifted with the capacity to assimilate ideas and techniques achieved at a high level of research, see their implications throughout the continuum of music learning, and render them into forms intelligible at lower levels of sophistication. Having identified the scholars thus gifted, let us be ready with projects needing their talents.

The category of projects which comes to mind as necessarily preceding others is that concerned with Babbitt's "adequately reconstructed terminology." Reconstructed terminology is needed at all levels of the music education continuum, both for the sake of each level and for smooth transition between levels. To my mind one of the most promising sources for improvement in this area lies in the development of programmed instruction; anyone who has worked with preparation of such materials is aware of the discipline imposed by the requirements for accuracy and economy of expression. It is not difficult to envision projects in the theory-applied-to-education research category wherein successful program formats for the teaching of music fundamentals would be analyzed for the purpose of deriving a core of common language which could then be tested in terms of its modification for use at lower levels of age and sophistication and for its adequacy in providing a direct approach to progressively higher levels of terminology and symbolic representation. I think I need not belabor the point of the futility of teaching at any level through implanting ideas which must subsequently be unlearned. I cannot resist quoting the spectral sentence which haunts the college theory classroom: "The quarter note always gets one beat."

It has been demonstrated that beginners, whether children or older, can be taught the basic concepts of pulsation and metric organization in such a way that they accept the occurrence of changing meters and changing beat types as a part of their first experience with rhythm in a learning situation. Research is needed which will identify, compare, and evaluate teaching of this type so that the most successful techniques can be clarified and made generally available. The theorist-educator operating in this area will have the opportunity to strike at the roots of the long-standing confusion in the use of the terms 'beat' and 'meter' as regards the modifiers 'simple,' 'compound,' 'duple,' 'triple,' and so forth.

Another example of reconstructing terminology at a basic level concerns the matter of pitch verbalization; movable DO or scale numbers, fixed DO or letter names, fixed DO with or without chromatic variants, exclusive use of neutral syllables. Dodecaphonic music has made its way into the curriculum at virtually all levels, and much study is needed to determine how to make the first approach to pitch concepts in a way which will obviate the necessity for the discarding and replacement of techniques.

Nowhere is it more important to establish the logical sequence in the teaching-learning process from lowest to highest level than in the area of music reading. Again, outstanding programs exist wherein beginners do not become polarized on the treble staff, lost on the leger lines, and terrified of the C-clef sign, but rather understand the notation system in principle and purposefully relate the symbols to sounds in terms of pitch and duration. These programs are still rather rare; they require a highly capable teacher, but studies by education-oriented theorists could put the methods within the grasp of far more teachers than are presently aware of the imaginative techniques which have been developed. Such studies would serve further to refine and modify such techniques in light of the demands of music of varying periods of Western culture.

I feel the greatest sense of urgency with regard to the inter-action of theory and music education research in the fore-going areas which are concerned with the transmission of the first knowledge of music. Much of what I am about to propose with reference to higher levels of the teaching-learning process will be sabotaged to some extent if the curricular revisions must be grafted on to fundamental concepts and skills which did not take into account the full range of the music within our grasp today. A certain amount of effort needs to be directed toward the solving of precisely this problem; ways must be identified in which a broadening and revising of basic musical equipment may be achieved with greatest effectiveness in company with the performance, analysis, and aural experience of music outside the "traditional" period.

In his review of the Contemporary Music Project report entitled Experiments in Musical Creativity, Arlan Coolidge expresses the hope that a "creativity kick" will not replace the previous over-emphasis of performance in the school curriculum.[13] Certainly this indicates another field where the theorist may serve to prescribe a balance between approaching music as listener, as performer, and as creator, in a manner where each aspect of the experience serves to illuminate the others. It is not difficult to envision a project which would set forth a meticulously structured curriculum unit wherein students would compose in terms of certain specifications with regard to pitch, rhythm, and form, deal with the performance problems inherent in their own music, and then be confronted with a piece of art music clearly derived from the same kinds of materials and calling for the same varieties of performance skills. It should be emphasized that the theorist is as much concerned with helping to provide accuracy and understanding in performance as with fostering insight into the structure of the composition being performed. It remains only to call attention to the fact that the type of project just described could be applied at levels ranging from elementary school to the undergraduate college program.

Another all-level contribution which stems from the type of research being contemplated has to do with the manner of conducting a class in performance, ear-training, sight-singing, or any activity demanding sustained and vital attention. Over the years when I have visited theory classes in numerous colleges and universities I have been struck by the difference in atmosphere, ranging from restless inattention to the most impressive unanimity of focus. I am quite aware that factors are involved here which lie in the realm of the psychologist, but there are contributions which may be made by the professional theorist. I believe much could be gained from a report on observed methods in the most successful classes, a report concerned with such matters as carefully cultivated response patterns, establishment of the habit of silence to give full play to the exercise of memory, economy in the issuance of verbal directions, and use of devices to keep all students directly concerned with the work going on at all times. Something which frequently engages my interest in teaching is our involuntary bodily response to music heard, and I believe the theorist-educator could turn his attention to enhancing and using this response, bringing it into more profoundly musical focus. All of these matters seem to be aspects of discipline, a discipline applied to listening, performing, and communicating.

This discussion would lack an important dimension, if it did not take into account the obstacles which lie in the way of achieving results from the kinds of research contributions suggested. The two primary objectives which have emerged in surveying some of the possibilities for working-in-tandem of theory and music education are, first, an unbroken line of continuity from elementary music instruction to the highest levels of study and, second, the involvement of this curriculum at all stages with music of our own time and of early times as well as with the more well-known styles. Until the teaching of fundamentals achieves everywhere the generalized approach which avoids the distorted or over-simplified devices, the longed-for continuum will not become fact. We all know too well the situation where within a single class we find students who complain that the current activity is something they did at an earlier level of study, while others are at sea, because they lack the prerequisites for that same activity. In some types of subject matter, programmed instruction is providing a solution to this problem, but ultimate success will come only when there has been time to disseminate a painstaking and penetrating analysis of what must necessarily precede what, and how each stage of learning can best be achieved. As for a truly effective synthesis of the study of music even from the Renaissance to serial and non-serial twelve-tone music, this too must be preceded by a long period of teaching teachers how to teach other teachers before the insights which are really basic to the long view of the art of music can be interpreted in terms producing a genuine revolution in the way we begin the presentation of the true fundamentals of music.

We are faced, then, with a gradual change-over; indeed, some progress is already evident. Patience and a high degree of cooperation will be required as new and revised methods are gradually introduced. Cultivation of the disciplines in communication, performance, and listening -- mentioned earlier -- will speed up this process.

This brings us back to the simultaneous appearance in education and theory journals of articles concerned with computer applications in the analysis of music. Both articles would be classified as reports on theory research, in my opinion, and I regard this as a thoroughly happy circumstance. The article in the Journal of Research in Music Education informs the reader where he may obtain the full report of the application of the described analytical method to music of composers ranging from Mozart to Webern.[14] The possibility of this kind of analysis brings much closer the achievement of the long view. The article in the Journal of Music Theory describes the application of the technique to certain Gregorian chants. The closing paragraph begins with this statement:

> Computer techniques not only allow the musical analyst to ask questions, the solutions of which would otherwise be beyond the range of practicality, but the data so generated often suggest new approaches, new problems that would not be suggested by the original material itself. Thus the computer, far from replacing human intelligence can, properly used, extend its range.[15]

Today we have remarkable tools to aid us in learning about music and about how to help others learn about music. If each teacher will recognize the place where he or she steps into the continuous stream of the teaching-learning process, then on the basis of what came before in the students' learning experience and in terms of what lies ahead, that teacher can call upon increasingly rich resources in learning to function there with utmost effectiveness.

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THE NATURE OF RESEARCH IN MUSIC PERFORMANCE

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In examining and planning the scope of the generative presentations for this conference, it became apparent that an area of concern in music education is that which centers around the performer of music. The term 'music education' traditionally includes, as one aspect, concern for the processes by which the development and acquiring of skills are guided and motivated by the teacher. We would then proceed to examine (1) the factors that affect the performer of music as he applies skills, (2) the factors that affect the instrument to which skills are applied, and (3) both the social and physical environment of the performer at the time of performance.

It was felt that the Conference Staff should develop a generative paper which would cover basic variables and focal points associated with the performance of music. The procedures for this were an examination of titles, the grouping of titles about ideas, and the identification of variables. This paper is a discussion of the peculiar variables in the performance of music which have been, or should be, examined. It is an attempt to identify that portion of research in music which is peculiarly within the realm of musical performance.

For centuries, the conception of the artist-teacher was based on a one-to-one ratio, and there was an assumption that a successful doer, ipso facto, would be a successful teacher. The efficacy of the process of interaction between teacher and pupil was assumed. An artist-teacher could produce only one kind of product -- an artist-pupil. If the product was inferior, the accepted explanation was the presence of faults in pupil material, and the process of teaching went unchallenged. Perhaps the mystique called "musical talent" should be preserved, particularly because "lack of talent," when applied to the performance of pupils, preserves the self respect of ineffective music teachers -- both studio and class teachers.

As one considers performance and peruses the titles for research on the performance of music, there appear to be several variables -- the instrument, the player, the score, the environment both social and accoustical, and the interaction of these variables. It will be noted that the teaching of performance is omitted from this paper because the teaching of something is not the thing itself.

The concern for these variables by music educators is, of course, a direct one. The value of music is in the sound of it. Everything else is subsumed to this. Therefore, more definitive knowledge about performance is a necessity to the music educator because he helps students make music and/or understand the sounds that they hear.

The following discussion of performance variables is not inclusive of all possible kinds of studies. It is an attempt to list the variables which have been examined and to suggest others which need to be examined.

The Instrument

Research on the instrument itself is primarily concerned with the construction of the instrument as construction affects tonal properties, manipulative ease in its moving parts, and the adaptability of the player to the instrument. The act of music performance involves dual elements -- the instrument and the performer as activator of the instrument. Separating the player from the instrument is, for some types of research, an almost futile task.

It should be made clear that in the analysis of performance there is no difference, fundamentally, between research in instrumental music and research in vocal music. Investigation of the voice is investigation of an instrument. The fact that the voice is not a simple or discrete instrument does not change the fundamental problem. However, there is a difference between where the research on the voice is done. The greater part of voice research has been done in universities, and the most significant has been done by otolaryngologist and neurosurgeons with the help of professional singers and voice teachers. The nature of this research has been primarily centered on the question, "what is the singing voice and how does it function?" These studies treat the voice as an instrument encased in the body. In fact, there is an effort to reduce other physiological factors so that findings about the voice can be isolated.

The most productive research on band, orchestral, and keyboard instruments seems to have been done in laboratories. Isolating an instrument as an object for research in a performance situation is a formidable task. Nevertheless, this latter would seem to be an appropriate line of inquiry particularly for the music educator.

Another group of variables which seems to need attention, or more attention, is related to instruments for children. If the value of music lies in the sound of it, then the quality of media for making music, particularly at the elementary levels, must be examined. There have been attempts at designing instruments of the informal kind for the non-adult. The quality and design of these cannot be changed adequately without extensive examination of materials appropriate to the economic problems in the schools and the physical abilities of the children. In addition, there is the need to find instruments of the non-traditional type which can be used as tools for learning about music. Perhaps the Orff instruments are the best-known examples of instruments of this type.

The Performer

The performer has been examined in research terms to some extent. The primary concern has been his physical construction as a component of sound production. The variables analyzed have been teeth, lip formation, tongue agility, finger agility, posture, etc. With recently developed sophisticated devices such visually obscure phenomena as size of opening in the glottis[1] and variation of air pressure in the oral cavity during brass playing at different pitch register levels[2] have been investigated. One investigation involved slow-motion and stopped-motion photographing of the action of the clarinet reed as it responded in an artificial, transparent embouchure.[3] The validity of this study, and of similar studies, would be dependent upon the extent to which the laboratory prototypes are functioning replicas of flesh-and-blood embouchures. A number of other variables seem to be involved, particularly vision and audio acuity. Parenthetically, it is interesting to note that much research has been unrelated to the making of music but has been based on the use of nonmusical instruments.

Another kind of problem is that of the "nonphysical", namely, the cognitive and the affective domains as well as personality factors and philosophical systems. There are some unknowns or unidentified aspects of the great performers which lend themselves to a mystique. The art of the performer often lies in a peculiar, or even fortuitous, combination of drives, knowledge, and skill. Certainly the knowledge and skills of the performer can be analyzed even though the difficulties of doing so are great.

The Score

The basic variable concerning the music score is the influence of the score, as an entity in itself, on the performance product. In one sense the problem of score perception is related to the adequacy of the score as a thing perceived. There are variables involved such as color of page and symbols on the page, the shape of symbols and lines on the page, and the relative sizes of these elements. One could pose a host of questions about the music score which are directly related to student achievement not only in the studio but also in the school classroom.

The Environment

The environment of the performer is considered to include three kinds of influences -- social, physical (things) , and acoustical. The social environment is basically the performer's audience. The actual characteristics of the concert audience include such variables as musical sophistication, predominant musical preferences, psychological set toward the process of concertizing, age, status, social mores, etc.

The physical environment of the performer is the actual physical setting in which he performs. The size, proportions, and construction of the room, aside from acoustical properties, are fundamental considerations. The variables here may be considered to be obvious and certainly inextricably related to the acoustical problems surrounding performance and the performer.

The acoustical environment is a primary concern regardless of the level of refinement of the art. It is directly related to two gross variables -- the physical, i.e., the materials and arrangement in a given performance room, and the psychological, i.e., acoustical preferences of the perceivers. The first of these variables has been the concern of engineers and, particularly, that small group of sophisticated guessers, the acousticians. "Tuning" a music hall is a new idea and one of our own time. The techniques required in this kind of endeavor are certainly extremely complex and beyond the monies and ability of the lone researcher. Variables of primary concern yet to be given consideration are those related to the learner and the kinds of acoustical situations appropriate to the learning musician in all aspects of his learning.

The acoustical preferences of the audience are perhaps more a social phenomenon than a musical one. The variables here are certainly related to the changing characteristics of society. These variables are subjectively evaluated by a performer for want of a better way to cope with them. With the changes in the varieties of sounds man makes and their symbolic treatment in music, one can observe extended decibel tolerance and tolerance of new textures and timbres along with tolerance of new melodic and harmonic systems and combinations. A more realistic task for research may be investigations of changes in the perceiver's drives or needs, the analysis of which would affect performance. An understanding of preference variables by a performer who has a broad repertoire could lead to some fascinating ad hoc programming.

The Interaction of Performance Variables

The variety of interaction problems to be studied is a formidable projection -- one which is further compounded by the fact that few of the variables involved can be held constant in a literal sense. However, there are some problems which are not an unreasonable basis for obtaining some "best guesses" about relationships. These are certainly in the relationship between the student and the meanings he derives from his acoustical environment. For example, propriecoptive and aural feedbacks in a practice room are all he has to help him as external guides for his behavior. His progress is directly related to this environment.

The Question of Methodology

One of the problems of research into the performance of music which needs to be considered here would seem to be research methodology. Again, as always, we are faced with the problem of the research objective. What is the purpose? A study in the history of performance practices cannot produce the same result as a comparative study of two performer's practices. A study of the social attitudes toward the performance of Bach in contemporary concerts cannot produce the same result as a systematic philosophical construction concerning the value of Bach in the present social milieu. It is the old ends and means problem. When Wehner wanted to know the true or factual difference between French and Italian clarinet tone, he performed an experiment using objective laboratory instruments.[4] Investigations of social values associated with these timbres would require a different methodology.

The Performance Abilities of the Teacher

In what ways do the acts and experiences of performance add to the musical insights of the music teacher -- insights that can be expressed and communicated in the teaching-learning process? Is there a significant positive correlation between level of performance and level of music teaching effectiveness? Is a variety of performance experiences more beneficial to the prospective music teacher than intensive performance experience on a single instrument or in a single type of ensemble -- orchestral, band, or vocal?

Conclusion

As has been made evident before in this conference, there are some very confusing issues before us. One of these is that of art versus science. The contention in this paper is that there are some problems in the performance of music which can be examined appropriately by using scientific methodology. There are other problems which are best measured by subjective insights and values. These two approaches to the analysis of musical performance already exist and complement each other. The present need seems to be for more extensive application of scientific methodology to the performer's problems.

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MUSIC AND MUSIC EDUCATION: A PSYCHOLOGIST'S VIEW

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Introduction

When I so presumptuously agreed to speak to this workshop about the relationship(s) of psychology to music education, I did so on the assumption that my knowledge of psychology was passable, and a belief that music education was not fundamentally different from other enterprises carried on in schools. As I plunged into the literature of music education, however, I found that music education is not a unitary term but an omnibus umbrella which is used to cover a great many sub-relations between the art-form called music and the process of teaching and learning carried on in schools. Much to my dismay, as an outside reviewer, I find music education literature to be a confusing mixture of metaphysical discussions about the nature of music and an emerging body of research on the nature of music learning. In order to bring some order to this literature for my own purposes, I have divided my remarks into two broad sections the first of which will deal with the way psychologists have examined music as an art-form and as a medium of communication. The second portion of my remarks will concern the processes of learning and measurement which relate to the functions of the music educator as a teacher.

Music as a Medium of Expression and Communication

The origin of humanly produced, music-like sounds has been lost in the history of man, although it is assumed to have been a part of the earliest attempts to communicate. The fact that it has persisted through the ages testifies to its effectiveness, not only as a means of self-expression but as a stimulus to the behaviors of others. Psychologists and laymen alike recognize the powerful psychological impact which music can have in moving individuals and groups emotionally. We do not, therefore, need to dwell on elaborate justifications for the interests of the psychologist in music. There is, however, a fundamental difference in the concern of the psychologist and the musician with music which, for purposes of this discussion, I may tend to exaggerate. It is my impression that the interest of the musician in music is largely contained in its utility as a means of expressing one's self, in much the same way as a written work serves the author or the painting serves the artist. It is an attempt on the part of a performer to communicate an idea, a feeling, a mood to another person. A psychologist, on the other hand, although he may be interested in music as an expression, is more likely to be interested in the response of the person experiencing a musical stimulus. In particular, the psychologist would like to know what variables in a musical stimulus determine the type of response which it will elicit on the part of the listener.

Quite obviously, the performing musician and the psychologist have overlapping concerns. However, I believe the fundamental distinction between music as a response and music as a stimulus does portray the essence of the distinction in the interest of these two groups in music.

In my opinion, the music educator falls squarely between these two groups, the psychologist and the performing musician, with clear and obvious responsibilities to understand music both as a stimulus and as a response. It has been my impression that, historically, music educators have been drawn principally from the ranks of the performing musicians with little or no formal understanding of music as a means of social communication.

From a psychologist's standpoint, there is no fundamental distinction between oral language and music as a means of communication. Both involve the control of sound waves to convey an intelligible message. In western culture, the principal difference between the sound characteristics of speaking and singing is the relatively greater control of pitch in speaking. In other cultures the distinction is less clear, and we often speak of certain languages as having a sing-song quality to them. The principal functional distinction between spoken language and vocal music does not bear on the characteristics of the sound wave but on the nature of the "message" for which the sound wave is a vehicle.

One of the basic premises in the study of language involves the relationship of words to concepts (semantics) or the relationship of words to objects (pragmatics) or of the rules by which words are combined (syntactics). In brief, the reason that words are useful vehicles for communication is that we have agreed to use certain words and certain constructions to convey a class of meanings. The words are verbal substitutes in our thinking for the actual events or concepts, so that when I say the room is cool, you all know with relative precision what I mean. The word 'room' you interpret as this enclosed space (pragmatics), the word 'cool' relates to a basic thermal concept which you all have in your vocabulary (semantics), and the construction verb 'is' you recognize as a singular, present tense form of the verb 'to be' (syntactics). Thus in this phrase, I can communicate a "feeling" I have about the thermal character of this room. Even with a relatively well-defined and elementary statement such as I just used, however, there is substantial ambiguity. I may, for example, not have been referring to the temperature of the room but to its color, or to its emotional impact on me, or to the social responsiveness of the occupants.

Given the interpretive problems of linguistic communication within a rather simple language system, consider the plight of the composer or performer who is dealing with a "language" which has a very poorly defined semantic or pragmatic structure.

One can, of course hide behind the argument used by some artists that the musical experience is neutral and that the "meaning" lies in the beholder, that there is no requirement that any art-form produce in various perceivers a common response. Further, the artist might argue that a musical production is an expressive statement by the artist and he, the artist, is relatively indifferent to whether or not it creates in the perceiver an emotion parallel to the one being expressed. The important aspect is the act of producing the statement.

Although both of these interpretations of the meaning of art, visual or auditory, have been widely embraced, they neither explain nor reflect the undeniable social response to music but are instead, in my opinion, excuses used to preserve the "alchemist's secrets" or to avoid the hard work of systematic inquiry found in other disciplines. This is not to say that even with rather precise symbolic statements we can assume that each person "sees" the same meaning, but without such systematic examination the arts can never assume their appropriate place as a medium of social communication. If, on the other hand, we wish to retain the image that music is an emotional cathartic, one has difficulty in justifying formal training in music theory or history or aesthetics. The fact that certain music has survived for generations and can be "read" as one index of the social history of its age is undeniable proof that music is a form of communication which has social significance far beyond the intention or motivation of its composer.

At the risk of further offending any of you who find my approach to music as an art-form insensitive, let me carry my premise one step further and refer to some of the efforts at building a "science of music."

A musical tone is, in the first analysis, a physical phenomenon consisting of variations in sound waves. There is a great reluctance on the part of musicians to equate a musical performance with such physical concepts as frequency, amplitude, time, and wave form. There is, in fact, reluctance even to use the same terms. Musicians prefer to use such words as pitch, intensity, duration and timbre (if I may use the English pronunciation). Furthermore, no musician worth his salt would agree that these four properties of a sound wave adequately describe what he means by the term 'music.' To these four terms musicians like to add a number of others such as phrasing, feeling, color, organic unity, texture, dynamics, etc., even though such terms are regarded by the serious student of musicology as less precise terms for one or more of the four physical principles mentioned previously.

It is apparently offensive to the musician, however, to think of music on physical terms, preferring instead to think of the musical experience as primarily an emotional activity intended for the creation of mood and beauty. To illustrate that there is more to the musical experience than simply a physical explanation, I have recorded about a minute of a 16th century composition played on a recorder. (Here the speaker played a tape recording.)

Actually, the selection that you have just heard is the audio translation from a set of mathematical sequences of numbers which were punched into IBM cards, fed into a computer, translated into magnetic bits on a tape, and re-translated into audio frequencies. Although the illustration here is simple and trivial, the point, I believe, is not. It is possible not only to analyze but also to reproduce frequency, intensity, duration, and wave form of any musical tone, chord, rhythm, or instrumental voice by varying one or more of these four physical properties of sound.

Now that you know something of my heretical position about the scientific analysis of music, let me play just another brief selection in which the computer has been programmed to play chords and the beginnings of simulation of voice patterns. (A second selection was played.)

The point of my argument here is not that music-like sounds can be produced from the computer, for a great many unusual objects have been converted into musical instruments. The point is that it is not only possible systematically to separate and examine the physical stimulus which we call music -- but also to allow us to vary the stimuli one at a time and observe the effect on the perceptual response of the listener.

The humanist, at this point, would argue that music is more than just the collection of the parts; that there is some undefinable ingredient in an aesthetic experience which cannot be recaptured by simply taking the experience apart piece by piece. A cake is more than chocolate, flour, sugar, milk, shortening, etc.; it is an undissectable entity. The humanist, of course, is right, that even an exhaustive list of the properties of a musical experience is not the experience itself. The thoughtful scientist would not argue that a description of a musical experience was the experience. What he would argue is that every experience does have properties and that the appropriate selection of properties allows us to distinguish one musical experience from another. Description, therefore, the first objective of science, is the process of classification which allows us to bring some order out of the multitude of stimuli which bombard us every day. Anyone trained in music is able to distinguish a major third from minor third. The scientist would argue that he does this on the basis of selecting certain properties of the two chords which allow him to distinguish them. What the scientist attempts to do is to bring the selection of these properties to a level of consciousness which makes them public rather than private. Thus, anyone, given the rules, would be able to make the same distinction. In an even simpler case, we may take children who have had no formal musical training, play two tones of different frequency and ask the children if they are the same or different. The children may be able to tell you they are different, but have absolutely no means of conveying to you that they are different in frequency. The fact that they can perceive that they are different is a private experience. As soon as they develop an understanding of the concept of frequency or pitch, they can make their experience public by using pitch or frequency as a property to explain their perceptions. There, in this very simple example, is a second very extremely important process called "concept formation" which requires that before the child can even understand your question, he must have command of the concept of sameness or differentness. This process of concept formation has received a considerable amount of attention from psychologists in recent years and is a topic which I want to return to in a few minutes.

The problem of describing a musical experience is much like a problem presented to the teacher of art who is dealing with hue, intensity, brightness, and form as properties of a piece of art. The fact is that a piece of art is a visual experience for the perceiver to which any verbal labels are only linguistic representations. Perhaps, unfortunately from the standpoint of the artist but fortunately from the standpoint of the consumer, the discipline of the art has chosen not to develop a separate symbolic language corresponding to musical notation. It is important, I believe, to distinguish between the phenomenon to be described and the choice of a symbolic language to describe it.

This is in direct contrast to the contention of Mursell in his chapter in the NSSE Yearbook on "Growth Processes in Music Education" where he states that,

> In order to think about, manipulate, and use any concept, it is necessary to have a symbol...so, it follows, that to develop a grasp of musical concepts, it is necessary to utilize and teach the musical symbols.[1]

Any notational system for describing a concept or phenomenon in another sensory modality is arbitrary and assumes conceptual meaning by definition, not by its inherent reasonableness.

In recent years, there has been given a good deal of attention in the field of psychology to a process called "mediation." In general terms, the process of mediation involves the use of language, either conventional English or perhaps a symbolic language such as mathematics (or in the case of music, a notation system), to help organize one's sensations and perceptions. It is the process by which a person hears a tone of 440 cycles and responds, "that is an A." It is the process by which we hear a rhythm of 4/4 and call it a march, or by which when we hear music increasing in intensity we say that it is getting louder. Mediators are a set of verbal symbols describing concepts or processes which allow us to organize our experiences. According to Woodruff (and others),

> If he (the student) is to develop a clear understanding of what he hears and what he perceives...he will need help in formulating sharp and definite concepts from the relatively fuzzy impressions he gets through his senses.[2]

The mediator, that is the use of language, is one means by which a student hearing a passage in music may use existing concepts in his repertoire in order to classify and organize his perceptions. As teachers, we may help him choose mediators, terms, and concepts which support rather than compete for his attention. Thus, for the student who knows music notation, the most meaningful and precise descriptions of music can be made in terms of this notation. Such descriptions are not essential, however, and probably confuse a student for whom musical notation is not a functional language. For the student who does not know musical notation, it is probably confusing to attempt to teach notation and concepts about music simultaneously. The problem is analogous to the learning of a foreign language. That is, in order to think in a foreign language, one must have sufficient grasp of the grammar and syntax so that he is no longer translating but is able to use the terms and concepts with as much ease and fluency as he does with his native tongue. Thus, the person who has command of French can develop the imageries and concepts without conscious translation thereby using the French language as a mediating device rather than having to work back to English. The same is true with the language of music, and, in order to think in musical terms and notation, a student must have a sufficient understanding of its grammar and syntax to use it with fluency. The alternative is not to converse with the student in this "foreign language," but use the language system with which the student is already familiar and comfortable even at some loss of precision.

Perhaps one of the difficulties in teaching musical notation is the attempt to relate a musical symbol with a verbal referent such as saying that an open circle drawn on the staff represents a certain auditory sensation defined in terms of pitch and duration. Music is an auditory sensation for which musical notation has been developed as a useful symbolic language. It is possible, however, to describe the musical experiences in standard English rather than in musical notation, since both English and music notation are attempts to represent in another language what is fundamentally an auditory phenomenon.

Beyond the relatively simple question of musical syntactics (notation) there is a second and more complicated area of music of interest to psychologists known as aesthetics or values. Although the psychologist attempting to study values is "bearding the philosophical lion," thus far he has managed to emerge unbowed.

In order to narrow the amorphous term values into a more manageable context, allow me to define musical values as the attitudes held by a definable social group concerning the merit of a musical object or experience. In this definition, several key words should be emphasized. Values, first, are attitudes (emotionally based judgments) and are believed to be the result of social learning. This belief is based upon research that has shown that attitudes are subject to change through relearning. Research on attitudes has also shown that musical values are predictable across cultures and within cultures across time. Both Farnsworth[3] and Valentine[4] provide convincing evidence that attitudes toward music are socially based and plastic over time.

In a very real sense, research on musical values has been hobbled by the lack of any objective means of classifying musical selections so that findings using one group of excerpts can be generalized to other selections. Even with this very serious constraint, however, certain principles seem to emerge:

1. One can change the impression of many selections by simply changing the speed at which they are played.
2. If one chooses very different types of music (The Merry Wives of Windsor and The Beethoven Funeral March) very good consensus will be obtained concerning the overall mood conveyed by the composer.
3. The specific images which are created in the minds of naive listeners are ideosyncratic to the individual and tend to converge on particular themes only after explicit training.
4. As one moves from gross judgments to more refined statements, the amount of agreement drops substantially.
5. Judgments of aesthetic preference are influenced by the social context and by the perceived expectation of the person requesting the judgment. The reviews by critics and other authority figures play a substantial role in the judgment of musical preference.
6. Familiarity with themes and constructions has a substantial influence on the acceptability of music.
7. The consensus of individuals within groups increases with age.
8. The timelessness of a selection seems to be related to its complexity, with simple pieces receiving acceptance quickly and then speedily declining in popularity. Complex selections gain acceptance more slowly and tend to persist longer once accepted.
9. The preferred portions of a musical selection tend initially to be toward the conclusion and more progressively forward as familiarity develops.

One could go on reciting the findings of specific studies; however, the point I believe is clear. Musical taste and/or values are learned both in the formal school setting and perhaps more importantly in the social community in which one matures. We must keep in mind that the musical environment in which children grow up is a highly complex social structure where the school experience represents only a small fraction of the total musical experience of the child. Further, the school often has low social ethos relative to the pressure of the peer group, family, and radio and television, and therefore, is impotent as a functional influence on musical taste.

My reaction is that our knowledge of how to measure musical values and meaning, and our knowledge of factors which influence its development are fairly well understood. What we do not know, apparently, is how to compete effectively with all of the other social forces acting on musical taste. Without meaning to introject my own value system, I think we must concede that music educators are losing the battle with today's youth if we are to judge their musical taste by the complexity and sophistication of the music they choose.

On this pessimistic "note," I will leave this part of my comments and move on to the relationship of psychology to the instructional aspect of music education.

Psychology's the Teaching-Learning Process

Without exploring in depth the semantic distinctions between various definitions of psychology and (music) education, let me propose a definition which describes psychology as a body of facts, principles, and methodologies which have resulted from the systematic study of behavior. Education,[5] on the other hand, I will define as the process by which one (or more) individual attempts to influence (facilitate) the learning of another. The distinction, I would argue, is neither trivial, nor simple to explain, and has been the basis of a great deal of misunderstanding and disagreement between psychologists and educators.

In its least embellished terms, psychology is a discipline concerned with the description, prediction, and explanation of behavior. Since learning is manifested as (a change in) behavior, one would expect psychologists to be concerned with learning. And indeed, some psychologists are interested in learning as a phenomenon to be described, predicted, or explained. Further, certain psychologists are even interested in the type of learning evidenced by humans, although the band-width of such interests is usually quite narrow and specific. When one comes to the complex kinds of human behavior which are evidenced by children in school, most psychologists, if they are honest, will admit that they can offer the educator certain principles to guide his efforts, and a methodology for examining behavior, but that beyond these, the educator is on his own. This is not to say that the psychologist is disinterested in classroom behavior nor that he is unsympathetic with the complex problems facing the teacher. Rather what he is saying, I believe, is that he has chosen a method of inquiry which he is convinced will, eventually, generate useful, general principles of behavior for the moment; however, the teacher-educator (as well as all other applied areas of behavior) must proceed on eclectic rules and practices.

The teacher, whether he teaches music, or mathematics, or typing, is primarily responsible for establishing conditions in which learning can proceed. It is important at this point, I believe, to make a second basic distinction, the distinction between teaching and learning. Unfortunately, we, in our imprecise use of language, tend to merge the two concepts. We say, for example, that we teach a child how to play an instrument or that we teach music appreciation to a child.

Actually, of course, teaching is the process we engage in, and learning is the process we infer takes place in the learner as the result of our efforts. We also know, however, that children learn a great many things in addition to what we "teach" them and conversely do not seem to learn other things that we try very hard to transmit to them.

It is important to keep this distinction in mind for the point of teaching is not teaching but learning and so while we in education pay a great deal of attention to what is done by teachers, we might well be more attentive to the behavior changes occurring in the learner. The problem is not that teachers don't know how to teach -- we make sure they can do that -- the difficulty is that the learners don't know how to learn. People are annoyingly fickle about what they will learn -- almost as if they had minds of their own!

I apologize if I have belabored a distinction which is already too obvious, but I am continually brought up short by colleagues who imply that the most important variables to manipulate in the classroom have to do with the teacher.

Because I have tried to emphasize the importance of the learner (at the obvious expense of the teachers) let me elaborate on the psychologist's view of the learning phenomenon and why I believe that educators should give greater attention to learning and less attention to teaching.

Learning is a construct (an explanation) which is used to account for predictable changes in behavior which are presumed to be based on experience rather than maturation. Less academically, we infer that a person has learned a skill or concept when he is able to use the skill or concept (such as up-down, fast-slow, loud-soft) voluntarily and appropriately as the result of contact with his environment (as opposed to reflexes and motor skills which are involuntary and/or the result of physiological or neurological development). Historically, certain psychologists attempted to explain all learning behavior in terms of one general principle or theory (s-r association, Gestalt, conditioning, etc.). However, more contemporary thinking about learning favors a view which distinguishes types of learning processes and accepts the possibility that different types of learning may be based on different principles.

In his book, The Conditions of Learning, Gagné[6] argues convincingly that the phenomenon which we call learning can be subdivided into at least eight distinct levels or types of learning ranging from what psychologists have typically called "classical" or "Pavlovian" conditioning to the highest level which he describes as "problem solving." One of the points Gagné makes is that each of these types of learning can be recognized in human behavior, but that no one of them is sufficient to explain all of the types of learning which we recognize. In music education, for example, we can identify each of the eight types of learning and, if we believe Gagné's argument, should vary our instructional procedure depending on which type of learning we are concerned with at a given moment.

Although no universally accepted taxonomy of learning types has been devised, I wish to illustrate, in the next few minutes, the usefulness of a rational model such as Gagné's for considering learning behavior.

According to Gagné, the most elemental learning (Type 1: Signal Learning) is relatively involuntary and borders very closely the reflex action. It is the kind of "automatic" response which occurs when we teach a child to play middle C on the piano to the point that he does not have to think about how he does it. In psychology this is known as classical (Pavlovian) conditioning. The basic mechanism is to pair two stimuli closely together, one of which unavoidably produces the desired response (the unconditioned stimulus) and the other stimulus which is to be substituted for it (the conditioned stimulus), until they become firmly associated. The unconditioned stimulus is then gradually withdrawn until the learner is making the desired response to the conditioned stimulus alone. In our piano example, we take the child's finger in our hand, hit the proper key, and say, "C". We repeat this a number of times gradually decreasing the pressure until just saying "C" will elicit the key hitting action.

Whether or not one agrees this is an appropriate way to teach this response is irrelevant, the example does illustrate what Gagné refers to as Signal Learning.[7] In a less clear example, much of what we refer to as the emotional impact of music probably arises out of the unconscious association of certain types of music (conditioned stimuli) with characteristic social settings (unconditioned stimuli). Our emotional response, which was originally elicited by the social setting, can now be elicited by simply hearing the music which originally accompanied the social event.

The second type of learning mentioned by Gagné is referred to as Stimulus-Response Learning and varies only slightly from the signal learning just described. Here again the basic paradigm is one of conditioning; however, several important distinctions between classical and "operant" conditioning can be illustrated by an extension of our previous example.

Consider again that our objective is to have the child play middle C as a result of our simply saying "play middle C." We would seat the child before the piano (to preclude certain random behavior), ask him to play middle C, and wait. If he did nothing, we would do nothing. As soon as he moved his hand to the keyboard, we would give him an encouraging glance and as soon as he hit a key, we would say "that's high," or "that's low," or "that's right." (Ideally we would have a piano that would not make any sound unless the correct note was hit.) The verbal assurance that his response was correct is known as reinforcement.

Gradually as the child practices the response, the number and range of errors will diminish until one can ask for middle C and he will respond without error.

As you may have detected, there are certain basic distinctions between classical and operant conditioning involving the process of "shaping" (bringing the learner to the desired response through successively closer approximations) and the use of reinforcement.

The use of this type of learning is very common in tasks involving motor skills and habit formation. Unfortunately, not all examples of this type of learning are regarded as desirable and we can knowingly condition undesired habits by the same mechanism that we use to shape desired learning if we are not extremely perceptive to which student responses we are rewarding.

The third type of learning is an extension of the second and is known as Chaining. In brief, chaining is the appropriate sequencing of two or more conditioned responses.

Although each of the examples used previously involves many individual responses, chain (serial) learning implies the proper ordering of responses to produce some superordinate response such as playing a three note rhythm pattern. By extending the chain, longer and longer patterns can be played. Building response chains is the basis for most practice on performance learning tasks.

Verbal Association is the fourth type of learning described by Gagné and brings to the learning task a new dimension, language. In each of the first three types of learning, language can be a facilitating stimulus but it is not essential. In verbal association learning, however, chains of verbal concepts rather than physical acts are linked. This implies that words (or other symbols) to be chained must have a prior association; thus, if we say "three plus two equals five," each of these words must represent a concept which has meaning in order for the composite statement to be understood. Chains of nonsense symbols (license or telephone numbers) such as 865-2524 can be learned; however, they represent "chains" rather than verbal associates unless we add associated meanings or patterns. In music, this is one of the functions of rhythm patterns -- to break the sequence of notes into more conceptually meaningful patterns. Meaning is also added to the learning of music by employing verbal associates such as fast-slow, up-down, arpeggio, etc. As soon as a student has the aural concept of tempo, the verbal labels he attaches to various rhythm patterns provides a powerful association to help him add meaning to what would otherwise be a musical chain. In general, the more associations a person has (aural and other) the less he must depend on rote memory.

The fifth type of learning discussed by Gagné is referred to as Multiple Discrimination. In certain ways, discrimination learning begins in much the same manner as does simpler chaining or verbal association learning; however, the process goes beyond the learning of individual patterns and extends to the establishment of relationships between two or more patterns. In teaching a child to distinguish between a polka and a march we first establish the auditory patterns individually and then, in order to avoid interference, help him identify characteristics which can be used to discriminate between them. It is this second step which distinguishes discrimination learning, the establishment of response similarities while emphasizing the critical distinction(s). Discrimination learning is an extremely important mechanism for expanding knowledge without producing interference and forgetting.

An extension of discriminating learning is described by Gagné as Concept Learning. As I am sure you are aware, concept learning has been receiving a great deal of attention from educators because of its obvious applicability to complex learning problems. In brief, a concept is an organizing device by which we categorize stimuli into manageable classes. Usually, conceptual classes are described in verbal terms, and psychologists who are concerned with this process speak of language as a mediating mechanism whereby concepts can be internally manipulated and refined. Certainly the fact that verbal concepts play an important role in human learning cannot be denied, for language is the basis of a great deal of the stimulus input to learners. Concepts, however, can be created from sources of stimulation other than conventional language, and, indeed, this is one of the premises for the argument of the distinctiveness of the visual and aural arts. Such properties as hue, intensity, brightness, and form in the graphic arts are visual concepts to which we have attached verbal symbols. The word "red" is not the color "red" and the visual concept of color can be obtained without language. In the minds of many artists, visual concepts should not be subjected to the distortion of verbal description.

In a parallel way, music is an aural medium and musical concepts to which we give verbal labels, such as harmony, are auditory concepts. These concepts can, of course, be translated into the language of the physicist or into conventional English, but the translation is not the concept and the word (musical) "harmony" is not meaningful without the auditory experience which the word has been adapted to represent.

In a sense, Concept Learning and Discrimination Learning may be regarded as inversely related to each other with discrimination described as the process of breaking down generalizations, whereas concept learning is often regarded as the building of generalizations. In most complex human learning tasks, both types of learning can be identified. Perhaps an important question to be explored in music teaching is to identify the relative emphasis on these two learning processes for various individuals or groups of learners.

At the next higher level, Gagné identifies a type of learning which he calls Principle Learning. In terms of our previous framework, principle learning may be regarded as the chaining of concepts each of which has been learned in relative isolation but which can be shown to fit into a more comprehensive pattern (a principle). So-called "discovery learning" fits into this level or type of learning although other instructional approaches may also generate the learning of principles.

In music, there is danger of confusing the learning of auditory principles with the learning of verbal statements about them. We may, for example, teach a person the principle of the equal temperament scale by showing him, mathematically, how an octave can be divided into 12 equal ratio semitones. He would now know a verbal (or symbolic) principle but would clearly not have any necessary understanding of the musical principle involved.

The eighth and final type of learning described by Gagné is referred to as Problem Solving. By this Gagné describes what many would refer to as an ability, rather than a type of learning. Briefly he describes problem solving as the process of selecting and recombining principles which will allow the learner to respond appropriately to new stimuli. In broader terms, this type of learning allows the learner to generalize principles beyond the particular contex in which they were originally conceptualized to new situations in which the principle(s) is (are) also appropriate.

In music, an example of problem solving behavior is found in the process of transposition from one key to another or in learning to play the saxophone from knowledge of the clarinet. At a more advanced level, the creation of new composition is certainly an example of a problem solving situation.

As you have no doubt observed in these past few minutes, I have been discussing types or classes of learning and have said almost nothing about learning theory. Although learning theorists have examined each of these types of learning (particularly the simple types), the principles which have emerged have proved of only limited value in planning instructional sequences. As I attempted to indicate earlier in this discussion, the teacher should be aware of the variables and concepts in learning theory and use them as guides but should not expect to find in the learning literature ready-made solutions to instructional problems. Learning theory is simply a matrix or framework conceived by psychologist to help them think about learning behavior.

There has, in fact, been a general decrease in attention to learning theory, at least in educational psychology, in favor of a more eclectic point of view about instructional problems. In my opinion, the most interesting and imaginative work being done on learning problems is being done by psychologists like Gagné working on limited instructional models based on observable behavior rather than hypothetical speculation about internal cognitive processes. For the educator who has been vainly struggling to make sense out of Gestalt or Hullian theory, I believe he will find the work of some of the contemporary instructional "theorists" much more meaningful and useful.

Let me leave the area of learning by returning full-circle to the point I attempted to make earlier -- the distinction between learning and teaching. In any complex behavior we may recognize two, three, or four types of learning taking place more or less simultaneously. It is important, if we are to facilitate the student's learning, that we be not so preoccupied with what we, as teachers, want to happen that we fail to recognize the learning process being used by learners.

In addition to the topic of human learning, psychologists have had a long and continuing interest in the assessment of musical aptitude (talent) and achievement (performance). Unfortunately, music assessment was caught up in the same general versus specific aptitude argument which has pointlessly absorbed so much attention in psychology. Today, little attention is being given to this conundrum, and the measurement community is more occupied with the properties of measurements (reliability and validity) than with the conceptual organization of intellect. There are, of course, notable exceptions such as the speculative-factor analytical work of Guilford[8]; however, such efforts are not in the main stream of thinking in measurement and, with the exception of a minor theme such as creativity, have little or no bearing on the assessment of musical ability.

Fortunately, from my standpoint as a reviewer, the number of standardized instruments designed to tap musical ability is relatively small (eight tests are listed in the Sixth Mental Measurements Yearbook[9]) and most of them are relatively old. Although the total mentioned in the Sixth Mental Measurements Yearbook does not include tests no longer in print, nor unpublished research instruments, as one looks at current research literature, it does not appear that any new breakthrough in this area of measurement is imminent.

As a general comment, all measurement, whether it be of ability or attitude, is a descriptive process. As testers we attempt to select some one or more properties which we assume represent the trait we wish to describe. Setting aside for the moment the matter of whether or not we have made a "good" choice of properties, the most important attribute of a description (measurement) is that it be reliable; that we can, depending on the type of consistency we desire, either describe some object (or event) in a similar way on two separate occasions, or we can secure agreement between two or more judges about the classification of an object (or event). It is axiomatic, I believe, that reliable description is the cornerstone upon which all measurement or description is based. If a discipline cannot secure a high level of reliability in its measures, all subsequent use of the measures is confounded with this source of "noise."

As I have already suggested, any description, whether it be of a talent, of an event, or of a person, depends upon the selection of certain properties which one hopes will capture the salient aspects of the object eventually described. Never, however, does one capture all of the properties of an event or object, but only those which, in his opinion, seem most obvious or relevant. At the risk of repeating myself, the description of an individual or an object is not the object itself. A description is a basis for putting an object in a class of similar objects while at the same time distinguishing it from other classes. Thus the description that someone is six feet tall, has brown hair, and weighs a hundred and ninety pounds is an attempt to put this person in a class of similar people and to distinguish him from people who are five feet tall, have blond hair, etc. In an analogous way, musical talent is a construct which may be defined to have certain properties such as tonal memory, pitch recognition, etc., but no one would contend that these properties are exhaustive of what we think of as musical ability nor even sufficient to describe it with any degree of completeness. The question of whether or not the properties which have been selected have any predictive utility is what the psychologist would call validity.

Validity, unfortunately, is a rather awkward concept to deal with because it tends to reduce itself to a matter of subjective judgment. In its simplest terms, the extent to which a description is valid is the extent to which one person can convince another that the properties selected adequately describe a particular object or event. In some cases, the proponent (the test author) attempts to convince the user of the validity of the measure through an examination of the content of the instrument (content validity). In other cases, the test author may provide statistical evidence of the predictive or diagnostic value of the measurements (predictive or concurrent validity). In the final analysis, however, the validity of a measure is the degree to which a potential user can be convinced that the description provided by the measure is relevant or appropriate to the use for which it is intended.

In my opinion, if music education is to improve the status of measurement in its discipline, it must abandon the hope of finding gross, universally valid predictors of musical ability and concentrate its attention on measures of attitude and descriptive measures of achievement. It is further my impression that the evidence from studies of perception indicates that learners are relatively homogeneous in auditory acuity and that much of what we observe as differences in perception are a function of attention or experience rather than of native ability. This fact, coupled with the long-standing principle that the best predictor of future performance is past achievement, suggests that the identification of children with special "talent" in music be based on performance rather than latent aptitude. Specifically, I am suggesting greater emphasis on the reliable assessment of demonstrated performance than on the search for untapped and undeveloped skills.

In the domain of attitude measurement, the psychologist can offer the music educator a methodology which has proved useful in a number of value-laden areas. As I have already mentioned, Farnsworth[10] describes a number of techniques for assessing musical taste. In addition to these, psychologists have developed a number of rating scale procedures[11] and other devices such as the Semantic Differential.[12]

A Concluding Statement

I believe it is accurate to say that there is no significant aspect of music which has not been examined at one time or another by psychologists. This is not to say that all questions related to music and music learning have been resolved, but at least some preliminary exploration of most phenomena related to the structure of music, the production of music, and the emotional response to music have been subjected to examination by psychologists. Unfortunately, with a few exceptions such as Seashore, the interests of psychologists in music and music education have tended to be transitory. Unlike the area of linguistics and language, psychologists have not, by and large, maintained long and integrated streams of research on problems of direct interest to the music educator. In part, I believe, the reason for this piecemeal attack on problems in music education is due to the societal view of music as a leisure time activity and in part due to the relative indifference of persons in music and music education to the activity of psychologists.

The fact that individual psychologists have typically only dabbled in music has lead to a great variety of uncoordinated and unreplicated results. Such results may have satisfied the momentary interests of the psychologists, but have contributed relatively little to a systematic and coordinated understanding of the musical phenomenon. Further, even when sustained, the interest of psychologists in music is less likely to be focused on the practical problems of concern to the music educator and more focused on the phenomena of music as an expression of behavior.

In reviewing the work in learning theory which might be related to learning activities in music and music education, I was struck by the naive attempts to translate learning theory into solutions of problems of practical interest to the music educator. I should re-state my bias, in case it was not obvious before, and that is that only a limited amount of the work in learning theory to date can be directly translated into procedures which will be of value to music educators. This is not to say that I do not believe that theoretical work in learning is valuable, but that for most complex human phenomena, successful attempts to generalize from the highly antiseptic conditions under which learning has been studied to problems of the real world lie many years away. There is, on the other hand, a large amount of empirical work on learning processes which probably would have bearing on the teaching of music were it to be employed.

One of the complicating difficulties in thinking about instruction in music surrounds the fact that musical performance involves an intricate process of cognitive and of motor skill. Most of the studies that I have examined in music education have not distinguished these two aspects of learning but have been concerned with the efficacy of gross methods of teaching students. Such questions as whole or part learning, massed or distributive practice and a number of others apparently cannot be answered with any generality in the area of music until we either break the complex phenomena down into more basic units or settle for less generalizability than we expect in laboratory experiments on learning. The problem is a common one in the applied areas of education, a problem which the psychologists wished were not the case, but these are the facts of the matter. Learning theories have been developed as a mode of explanation for prior behavior, but have not been notably successful in predicting subsequent complex behavior.

One gets the feeling from reading articles in music education journals that there is ambiguity about the direction in which the profession ought to move. There is, as I understand it, a substantial number of persons calling themselves music educators who are primarily interested in having music education in the schools regarded as a fine art, a second group who are primarily interested in the development of performance skills, and a third, and perhaps smaller group, who are interested in having music in the schools perceived as a legitimate part of the general education offering of public schools. Although this diversity of view points regarding the place of music education in the schools has been tolerated, it would probably promote the professional image of music in the schools if there were more professional unanimity about the priority of these objectives. It would seem to me very difficult to promote an articulated music education program throughout the entire school program if the profession provides little or no guidance to music teachers and to public school officials about the appropriate place of music education in the overall school program. In my opinion, the field of music education must assume the principal obligation for developing research on problems of learning musical skills and understandings. The psychologist, physicist and sociologist stand ready to help, but the leadership of research in music education must come from the profession. It is encouraging, I believe, to see the amount of research done by persons who are presently in graduate schools across the country, and one would hope and expect that such people will continue to encourage and provide the research leadership which is so essential to the music education profession.

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RESEARCH IN SOCIOLOGY AND MUSIC EDUCATION

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Editor's note: The remarks of Professor Reckless were not presented as a formal paper. The following report is a condensation prepared from a tape recording of his presentation.

I didn't quite trust myself in this assignment because I thought I might infuse into it too many ideas related to personal interests -- drop-outs, truancy, and delinquency. So, I assembled five younger colleagues in our department at The Ohio State University who are interested in research and met with Dr. Cady. Each one of us had his turn in indicating what he thought might be interesting projects and sociological twists for study and research in music education. Consequently, my report today is going to list some of the basic ideas developed at that little "think-tank" of a week ago Saturday.

I am sure that you are all quite familiar with what is called "the scientific method." As far as sociology is concerned, there is little doubt that sociological research is crude as compared with research in physics and chemistry, and is, on occasion, more crude than research in psychology, although we overlap a good deal.

I know that sometimes a status is given to the several sorts of research and that a priority is given to each. But I feel that there is room for many sorts of basic descriptive studies in the field of music education. These studies would be similar to the kind of study a rural sociologist would conduct in a specific community and that an anthropologist would conduct among primitive people by living among them and by keeping a diary of certain observational notations, interviews, etc. There is much that can be said for a good descriptive study.

At the next level, although perhaps not more significant, is survey research in which, through the use of a simple instrument or schedule, a simple research task is performed in a somewhat more systematic way than is performed by an investigator who merely makes observations and records an inventory. Much good information could be obtained in this way.

The next level of research study is somewhat more statistical than the ordinary survey. In this an attempt is made to relate certain variables. Sometimes the variables move together with changes which might be called concomitant variation. But, in this regard, variables have a way of changing from one side of the fence to the other. Sometimes a variable may be an independent variable, and at other times the same variable may be a dependent variable. For example, if we were going to study the class factor in music participation in a certain school system, one might use the North-Hatt Socio-Economic Index. Suppose a father's occupation has been rated by this Index. The children who came out of a family which has a father's occupation rating, e.g., under 66, could be charted. Then could be charted the children whose father's occupational rating would be higher than this. Then one could compare the participation of all the children who were supposed to be, in terms of the North-Hatt Scale, in that working class with the participation of the children above that class and determine whether their averages of participation are sufficiently different from each other to cause one to raise questions. So, in the one instance, the socio-economic indicator would be the independent variable, and the performance or the participation would be the dependent variable. Similarly, one might analyze two variables such as truancy from school and musical participation. It is possible that there are many variables which may have an effect on music, and music may have an effect on them. The variables may be concomitant. It may be worthwhile for us to look at some of these single dimensions because I was not always sure in reading this excellent report (Schneider - Cady) whether some of the research needed help from sociology. I was not always sure how these conclusions were developed and just what statistical methods were used to analyze the data.

Then, of course, related to statistical methods (which I hope is not an ugly term for you) is experimental design. For example, certain kinds of music education in small groups could really represent a group-session sort of therapeutic experiment. In this kind of experimentation, one would expect certain kinds of results to take place. If one had some criteria by which to measure results, and if one had some way of selecting children on an odd-even basis to go into, or not to go into, a musical therapy group, then one would be approximating what is an experiment in psychology, social psychology, and sociology.

To illustrate research in a school-centered, sociological setting, I give the details of an experimental investigation associated with a youth development program in the Columbus Schools in the seventh grade. Eight junior high schools were selected because they were inner city schools. To these junior high schools came students from forty-four elementary schools in high delinquency areas. In May we asked each sixth grade teacher to nominate those sixth grade boys who were "going to go to hell in a hurry" and to nominate those she thought were "solid as a rock" and would go through school and be in school at sixteen years of age. We found teachers' nominations to be fairly reliable. We took a split-half section of those youngsters who, according to the teacher and the principal, were going to get into trouble with the law very soon. We put one-half in the "therapy session" so to speak; the other half got the regular school fare -- the regular self-contained class program of studies which, in the Columbus system, includes instruction in geography, Ohio History, and English.

In our experimental program we soft-pedalled geography and Johnny Appleseed and got down to models of behavior in their terms: "Who is the best male worker on your block? Put his characteristics on the board." "Look at the morning newspaper today and pick out some jobs that you'd like to have when you grow up, and let's ask the man from the unemployment center what it takes to hold down these jobs." Everything was models. We took the therapy section to the zoo where the boys watched family dependence among animals. We couldn't lecture our kids about the family in terms of "poppa's a drunk and momma walks the streets." But we could talk to them in terms of dependence. We used our models for about 39 weeks and then tried to catch up on geography, Ohio History, and English. Now we are in the midst of finding out, when all the subjects are over sixteen, whether our experimental group held the line -- whether the police caught them, whether they were frequent truants, whether they stayed in school longer than did the control group. We did have a control and an experimental group: we had a split-half of the boys expected by the sixth grade teacher and the principal "to go to hell in a hurry," and then we had a sample of the "good boys" nominated by the teacher and the principal. This is a crude experiment. I hesitate to call it sociological. It could be an experiment in many fields -- it could be in psychology, social psychology, psychiatry, or in other fields. It is offered here only as a model which reveals that sociological experimentation in a school setting is possible. When studies of this kind are completed, the investigator has some statistical result that is a first cousin of sampling and of measures of assessment.

Our group of five young men in sociology and Professor Cady touched on this particular problem: namely, the development of some useful, pragmatic criteria to be used in music education assessment. What is participation in music education? What is the criterion of the impact of a good program? What do we use for evaluation -- the ability to sing hymns on Sunday morning? Is the criterion a teacher's rating of achievement? In the field of delinquency, the dependent variable is often apparent. One can say: "Has the child come to the attention of the delinquency squad; has he been truant and a drop-out?" One can get recorded information. And there are other tests of measurement such as direction of socialization on a socialization scale, the California Psychological Inventory, or the PD scale of the MMPI. But I could not detect any criteria for success or failure, or any measure of directionality, or any measure of level of performance in my review of music education studies to date.

Now, I want to report some target areas that our "think-tank" developed. Here I will certainly not attempt to be logical; I will be only suggestive.

One target is the relationship of music education to a social structure. Here we have such matters as the attitudes of the general public toward music education. How is music education perceived? What is the role of music in the school? Is it a second-class citizen or a third-class citizen in the scheme of education? Is music education included in the power system in school organization, or is it way out in left field? There certainly is a set of circles of organization within a school system in which the sociologist might be interested.

What is the changing role of music in America today? Is it a performance role, or is it a listening role, or is it an incentive role? What sort of role does music have? Certainly we all know folk music. Even when there was no universal notation, people sang and danced. Often these musical activities were related to social functions in primitive life and to village life. But what is the role of music today in America? How is that role changing? That question certainly would suggest details of some rather good first-hand descriptive studies.

A second area is the impact of mass media on musical interest and musical participation. And a third area is the objective and statistical measurement, or determination, of "successful" and "unsuccessful" music programs. Do we have criteria by which we can measure the effectiveness (success) of a school music program descriptively, objectively, and statistically? There are other target areas: What effect on music programs do the differentials of county, city, and state support produce? Has any one come to grips with this?

Our "think-tank" of young sociologists mentioned the possibility of studying the music teacher as compared with the other teachers. What rewards are there for her activities and for her concerns about effectiveness? What are the differentials which influence the selection of music teaching as a teaching area? How much turnover is there among music teachers as compared with other sorts of teachers, whether they are in sports or art or regular classroom instruction? What are the satisfactions and dissatisfactions of music teachers and how do these compare with the causes of restlessness and the dissatisfactions of other teachers? To what extent do music teachers participate in parent-teacher meetings and in community functions?

What about the illness problem and need for substitutes? Do music teachers tend to become ill more readily and require more substitutes than do other sorts of teachers? Are the physical demands of music teaching particularly enervating?

How do music teachers spend their summers as compared with other teachers? Are they going over to the Edinburg Festival? Are they going out to Aspen? Or are they just building up credit at The Ohio State University?

What are the parameters of the role of a music teacher and the supervisor? What is each supposed to do? What definition of his own role does each have? What is his definition of a successful year?

What are the music teachers' aspirations for upward movement in the school system as compared with those of other teachers? Do male music teachers become administrators? Do they become county superintendents of schools? Do they become principals? What is the comparative aspiration level, the upward movement, the upward aspiration of music teachers? Or are they happy and satisfied with their teaching field?

What is the self concept of the music teacher? Are music teachers more professional than other teachers, and are the music teachers who enter into elementary school music teaching more professional than secondary school music teachers?

What are the teacher-pupil relationships associated with music teaching? Can these be compared with those associated with art, sport, drama, and academic teaching? Is there a special master-apprentice relationship such as was developed between great Renaissance masters and their pupils so that one never quite knows whether a picture was done by a great master or by his apprentice?

Finally our "think-tank" had several suggestions about the study of pupils themselves. We recognize in sociology that child development aided by parents and teachers is so much more important than arithmetic and spelling. Sociologists are beginning to make themselves felt at the threshold of adolescence. We feel that the school in the modern, mobile, industrial society of ours is really a second line of defense. In many instances, we feel that the teacher will have to be the most important "significant adult", to use the modern terminology, in the child's life. I think it is going to be progressively less possible for parents and relatives to be significant in the lives of children. Teachers are the second line of defense. If the child slips through the first line of defense, namely, the family system, he comes to the school system. And if the school gets over the habit of emphasizing formal learning and gets down to real child development, the chances for a better America will be greatly improved.

So with that thought in mind, our "think-tank" had a few other suggestions. Are there any basic conflicts within a school system which result in the children's being caught between the system of music education, athletics, art, speech, drama, and academic matter? Are there, in the school system, hidden conflicts?

One thing that we all felt is important is the child's perception of music participation. Is music participation something to hide? Is it something to feel inferior about? If a child comes out openly and identifies himself with music, is he a sissy? Is there any way to get at some meaningful studies of the child's perceptions and images of participation as an outward expression of musical interest? Before a child will dare to carry the violin around, is it necessary for the child to have a peer whom he looks up to and who also carries a violin around? How important is it that some adult who is very important to the child -- an uncle, an aunt, a father, a mother, a grandmother, or somebody -- has stimulated an interest in music -- someone who also participates in music and gets a lot of pleasure out of it? Is this one of the reasons why children go into music? Likewise, if a boy belongs to any peer group, such as a street corner group or play group, does this mean the end or limitation of interest in musical participation or of musical interest in general?

What about the child's perception, particularly that of the child of 15 or 16, as he begins to look over the effects of adult activities? What about the older adolescents' perceptions of music as a career? Is it possible to make studies of this?

In closing, there are really hundreds of important, significant, and exciting studies that could be made of the system of musical education and of where it stands comparatively with other phases of education. Important studies could be made of music teachers as compared with other teachers -- what their perceptions are, what their prejudices are, etc. And I feel that we can also tap the child himself and find out where music stands in his life.

Thank you very much, Mr. Chairman.

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THE IMPLICATIONS OF THE DEFINITION FOR RESEARCH IN MUSIC EDUCATION

Robert Petzold
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Editor's note: The following paper is Dr. Petzold's edited version of a manuscript derived from his original rough draft and the tape recording of his presentation to the Conference on the third morning. The reader will want to know that these ideas were organized after 10 P.M. of the Conference's second day, i.e., after the generative papers and discussions concerning the definitional problem before the Conference were completed. At least, the reader will find an extraordinary quality in this summary of the preceding papers in this section of the report, a summary which was produced under less than optimum conditions.

Your program for the Conference states that the title of this presentation is, "The Implications of the Definition (presumably the definition of music education) for Research in Music Education." My assignment, perhaps somewhat optimistically delineated, was to develop a synthesis or try to express the consensus of those present concerning what music education is, and then move on to a consideration of what the nature of research in this now-defined field of music education ought to be or might be, as well as to consider the ways in which other fields might contribute to our own efforts to extend the frontiers of knowledge.

The nature of the assignment obviously precluded any advance preparation because there seemed to be no way of determining what the Conference members believed with respect to their identification as music educators. Furthermore, it was impossible to ascertain what our colleagues in the "other fields" might have to say. The report was begun at 10:30 last night and is ready for your consideration. I would prefer that if a title must be e given to this report it read as follows: "The Implications for Research ___________," thus permitting each of you to complete the title, by defining your own problem area as you choose.

The proposed definition of music education, dated February 1, was submitted as a basis for discussion and primarily designed to clarify the central concerns of this Conference. There remains no doubt in anyone's mind that it accomplished the first purpose, namely, that of providing a basis for discussion. Whether the subsequent modification or modifications succeed in accomplishing the second purpose remains to be seen. I have deliberately remained on the perimeter of the discussion in order to function more effectively as an objective observer. I am not certain whether I will, either courageously or foolishly, attempt some kind of synthesis of the discussions. Let us first give attention to the very excellent reports of our several consultants.

Musicology, according to Dr. Stone, is a broad field which has as one of its primary concerns the responsibility for systematically organizing information pertaining to the musical culture of our past as well as our present, for examining and evaluating this information, and for disseminating this information. An intentional by-product of these investigations, or perhaps another primary concern, is to provide us with quantities of hitherto unavailable literature and to indicate appropriate performance practices. Ethnomusicology deals with the question of music in non-western and folk cultures. In addition, musicological research also embraces concerns for aesthetics, philosophy and criticism of music, theory and acoustics, and the physiological and psychological aspects of music. I trust I have neither added nor omitted anything from what seems to be a field that may be as broad or as elusive as the one we have tentatively labeled "music education."

Dr. Stone charges music education, not in an accusatory tone of voice, with assessing the degree to which it has met its primary responsibility for improving aesthetic education in music and for developing future literate consumers of music: "Music education should rededicate itself to the teaching of music as an art and as part of general culture." He also expressed the hope that research _in music education_ could help correct the failure, on the part of the musicologist, to place sufficient stress upon the aesthetic value of music as an art! I assume, because musicology is essentially a field of graduate study, that he is accepting for the field an indirect responsibility for this failure insofar as it relates to the prospective or graduate music teacher who subsequently works directly with the youth of our country. Another task for music education is to move ever closer to establishing a continuum, preschool through college, of musical learnings and experiences.

To help meet these responsibilities in music education in the broadest possible definition, Dr. Stone has suggested the following:

1. There has to be improved communication between and among all persons concerned with music if we are to arrive at a better understanding of the ways in which we can all serve the best interests of both music and youth.
2. The information which has been accumulating from research in musicology is now readily available so the music educator can evaluate, assess, and select that which might be particularly and uniquely appropriate for use in the schools.
3. Research in musicology and research in music education have many common dimensions, and, in terms of basic knowledges and procedures, the fundamental preparation for any research in music might be common for all graduate students. Special field applications would follow in subsequent and differentiated courses.
4. Regardless of who does what research, whether it is the music educator or the musicologist, the findings, as they relate to the development of aesthetic sensitivity, the literate consumer, and the understandings about music as an art, must permeate all levels of instruction so that our educational practices are affected.

This is an impressive task and, from Dr. Stone's presentation, I believe we understood that there is much information available, that there is a willingness to make it even more available, and that we can work together as co-operative partners in those concerns we both share.

Professor McGaughey suggested that the term 'music theory' encompasses those processes and activities aimed at revealing the nature of music itself, with the processes to include: (1) use of a wide range of verbal and symbolic communication systems and (2) viewing creative and performance skills as a means toward increased understanding. Both of these phases are to include experiencing a substantial amount of carefully selected literature to provide insight into all significant types of music and to identify those qualities which characterize a masterpiece. Music theory is viewed not as the acquisition of skills, but as the acquisition of musical understandings and mastery.

She then proceeded to delineate certain kinds of appropriate research activity in music theory which might include:

1. Descriptive studies concerned with identifying and comparing various analytical tools;
2. Historical studies of many kinds which might well impinge upon the concerns of the musicologist;
3. Experimental studies to construct and evaluate new notational systems, new analytical tools, and to discover whether there is a better way of communicating;
4. Philosophical research having as its primary goal the formulation of a general analytical theory pertaining to music which might then be applied to the music of many periods and many styles.

Professor McGaughey feels that there is an urgent need, particularly as we begin to expand our discussions about Comprehensive Musicianship, for a clearly defined research area dedicated to utilizing the new insights achieved through research in music theory and for assessing their applications to music education. For example:

a) We need to derive a core of common language which could be tested in terms of the modifications for use at lower levels of age and experience but lead appropriately and sensibly to progressively more complex levels of terminology and symbolic representation.

b) We need to determine how to make the first approach to certain basic concepts relating to pitch, meter, beat, timbre, etc. so that these approaches are not only sympathetic to subsequent approaches but complement and lead directly into these next levels of approaches.

c) We need to identify those cooperative activities which might help establish a logical sequence of events in the areas of music reading.

d) We need to examine the ways in which theorists and music educators, and on the basis of listening to our discussions and reports I would add the musicologists, might combine their concerns toward the improvement of college theory teaching.

Both Professors Stone and McGaughey have recommended cooperative attacks on these problems which relate to the continuum of music education, giving particular attention to musical values while at the same time recognizing the essential nonverbal characteristics of music.

Dr. Benner, in his discussion of research in music performance, provided us with an extensive listing of research appropriate to the several performance variables. Music educators are, at certain instructional levels, often concerned with performance skills and performance, particularly as these help bring music to life. It is hoped that such experiences will have a significant impact upon the musical learning of the participant. Here we share, perhaps at different levels, the concerns of our colleagues in the area of applied music. These variables include the physical characteristics and limitations of the instrument itself. This is a concern to the music educator, to the studio teacher, and to the musicologist. I think Dr. Stone referred to some studies that have sought to identify the physical characteristics of early instruments so that we could reconstruct them. It is also important to know more about the physical characteristics of musical instruments as we now know them. We are concerned with physical and psychological characteristics of the performer, together with the implications each of these has for the learning process. We are concerned with the environment of the performer, i.e., the interaction that takes place between the performer and the physical situation and between the performer and the audience. Concerning the procedures, techniques, and devices for developing appropriate performance skills and understandings, are we content with an archaic system of instruction? Do we have new ideas? How do we evaluate the contributions of Suzuki in developing skills of performance? Is Orff to be viewed as a music educator, as a composer, or as both? It would seem that we are interested in bringing together the findings of music theory and musicology and reconstituting them in a way such that they begin to bear more specifically upon certain problems of musical performance.

Dr. Lathrop stated that the psychologist's concern was for the kinds of responses people have to musical stimuli. He went on and differentiated the musician from the psychologist by saying that the performing musician may be concerned with the expressive and aesthetic nature of the stimulus itself. I don't think that these are mutually exclusive and I doubt that Dr. Lathrop intended them to be, but it certainly delineates an area of concern. The psychologist is concerned with the ways in which people respond, the kinds of responses they make to stimuli, whereas perhaps the performer might well be concerned with the manipulation of the stimulus itself. The music educator, unfortunately for us, falls squarely between these two; or perhaps fortunately for us, because this does place us (again assuming a great many things I have no right to assume); it places us directly as a communicator between the stimulus and the response. We really operate at the junction of these two concerns. Dr. Lathrop recognizes the inherent problem of musical meaning, a problem largely because of the poorly defined semantic and syntactic structure of music. He suggests that in building a science of music, the physical concepts and the definitions of musical tones that are perfectly acceptable for the operational procedures of the psychologist might not be acceptable or usable by the musician. One can physically describe a set of sounds without having the description bear a significant relationship to the way in which this stimulus then affects the responses of the listener or the observer. Certainly we need to be cognizant of the fact that Dr. Lathrop provided us with a tentative delineation and definition of the two fields, namely, that psychology is a body of facts, principles, and methodologies resulting from a systematic study of behavior, while education is the process by which one attempts to influence the learnings or behaviors of others. Psychology can offer principles of behavior which we can extract, review, evaluate, and perhaps apply in a variety of modalities to test out some of our own ideas. Psychology can offer several classifications of the types of learning which I think we suspect but might well investigate more carefully. Certainly we should not be ignorant of the degree to which psychology has managed to clarify, evaluate, and measure our procedures precisely. We need to be concerned with the importance of the learner in this total process and recognize that the field of psychology has identified several kinds of learning. We have to begin to examine in our own discipline of music those kinds of learning we consider significant, and identify the ways in which we wish to examine these. It is encouraging to realize that the psychologist stands ready to help. I wish that we all had more Dr. Lathrops on our staff -- there may not be enough of him to go around. But again it comes back to the matter of communication. We need to begin to ask the right kinds of questions of our colleagues in other fields if we are going to obtain any satisfactory answers, suggestions, or procedures. Until we have begun to ask these kinds of appropriate questions we shall continue to experience frustration.

Dr. Reckless approached the whole problem from a sociological-anthropological point of view. I think, as we listened to the suggestions growing out of the "think-tank" and listened to his presentation, we become even more aware of the breadth rather than the narrowness of our concerns. He emphasized that the scientific method, as usually defined and employed in psychology, may not be extensively utilized in the field of sociology. This led him to suggest that certainly one of the crying and urgent needs in music education is for a variety of descriptive (and I would like to underline "descriptive") studies in the area of music education.

There are grounds for believing that survey or status research, when carefully conducted, can provide a great many facts which permit us to draw conclusions and to identify tentative hypotheses for subsequent investigations. In sociology they have begun to use the statistical approach to identifying and relating dependent and independent variables. In music education we must also more clearly identify which variable is dependent and which is independent so that we are not faced with the uncomfortable situation of having to draw conclusions without knowing what we have discovered. The fields of sociology and anthropology can construct experimental designs to get at certain basic problems relating to the nature of man and his relationship to society. We too must consider this kind of approach, all of it done on the basis of establishing a number of definitions and a number of criteria.

Dr. Reckless left us with a great many ideas, and I would doubt that we copied all of them. Central to Dr. Reckless' presentation was his concern that sociological research was not for the sake of activity, but for the sake of attempting to identify more clearly the role of the individual in his social and economic structure. In addition, he was concerned about the influences this definition and identification might have on the individual's activities which take place both in and out of school. Another group of concerns included the effect of mass media in the defining of music programs for the needs of particular individuals; the relationship of teaching methods to outcomes for stated objectives; studying the role of the teacher; studying the role of the pupil, to sense just exactly what this person is. How can we in music education become more concerned with learning itself? How can we resolve some of the many conflicts that undoubtedly will continue to arise as we attempt to define what is now called Comprehensive Musicianship? I think, as we listened to Dr. Reckless yesterday afternoon, we could sense that in the field of sociology there are some structures, some designs, and some techniques, which have implications for all who are concerned with the role of music in the aesthetic education of the individual.

Dr. Gephart undertook the task of helping us begin to identify significant research and immediately abandoned the use of the word 'significant' on the grounds that this placed him in the indefensible position of having to define that which is not easily defined. He chose rather to talk about something else which might enable all of us to arrive at a satisfactory definition with respect to significant research. He put the finger on one of the central problems facing researchers in many areas when he said that we should be concerned with the way in which we go about identifying a problem. There are many ways of identifying a problem, and, as he views them, perhaps the best way is to find that a problem exists in one of four events -- an anomaly, a situation of unverified fact, a situation in which conflicting facts are reported, or in a completely new and uncharted area where there is neither an anomaly, unverified fact, or conflicting fact. As we look at this matter of research, it becomes evident that a co-operative effort is essential. If the music educator is to utilize effectively the knowledge and skills of research, he must begin to focus on this business of establishing and identifying problems and asking the appropriate kind of questions. We cannot apply a cookbook approach to research. We do not have a set of standardized problems for which we have a set of standardized designs or a set of standardized statistical analyses. What might be appropriate for one of us in this room might be completely inappropriate for someone else.

Out of all of these presentations, then, comes the notion that whatever we call ourselves, "music educators" or something else, we are committed to investigating this learning setting wherever it may occur. We need to give particular emphasis to what Dr. Stone and others feel is our charge, namely, the development of the literate consumer of music and the improvement of aesthetic education. We have then a number of problems which relate directly to the learner himself regardless of instructional level or the specific subject matter field. We need desperately to know more about this learner so that we can intelligently cope with many of our subsequent problems. We need to know about the learning setting, the interaction which takes place between the physical environment and the learner, as well as the interaction between the teacher and the learner.

Certainly within this complex of the teacher-learner, or perhaps the guider-learner, we have an equal concern for procedures. Are there some that are more effective than others? How do we assess and evaluate? What are the implications of materials for procedures, for the learner, for the teacher? So broad a spectrum includes everyone who wishes to be included. It seems to me, however, that for the task of the Conference we cannot hope to conclude our work in the days remaining if we retain so nebulous a definition of music education and the music educator. We are not permanently and irrevocably excluding other definitions, but we are saying that some delimitation is necessary in order to come to grips with an identification and a classification.

I think someone indicated in the discussion yesterday that if we were all given a body of studies and asked to develop a classification scheme we might not all utilize the same kind of classification scheme. Certainly it is apparent that as any researcher identifies and approaches a problem he approaches it with his own unique and peculiar background and what is appropriate for him may not be appropriate for someone else. I do not believe, if I sense the presentations made yesterday, that there is any deliberate or even implied notion that music education is this box, that musicology is this box, that music theory is this box, that psychology is another box over here. I don't think that anyone in the room felt this kind of isolation as we listened intently to all of the presentations. If we are looking for a central variable around which we can organize some of our concerns for the Conference, let's start with the learner. What do we expect him to learn? Why do we expect him to learn? Relative to our own field of music education, I do not propose to summarize and synthesize the discussions concerning the definition. I believe the discussion was extremely illuminating and beneficial. As far as the nature of research in music education is concerned, I would like to conclude by leaving you with these general thoughts.

First of all, we have to recognize that there is a variety of approaches to the ways in which problems may be solved. These approaches include all the typical types of research with no single emphasis or priority given to anyone unless you begin to establish a priority for certain kinds of studies on the basis of urgency. We have a major responsibility for encouraging this kind of activity by college and university personnel, for examining our training programs at the college-university level, for training researchers, and for considering the problem of dissemination so that research findings have some measurable effect on education practice. I think we have to take a broad view here of that which is relevant and that which is irrelevant. It is possible that the question of relevance may well be an individual rather than a collective concern. We can agree as to what might be competent in terms of content and style, but we may not necessarily agree as to what was relevant and irrelevant. If we delineate problem areas and tie in the research in all of the fields that we have been talking about, then as they bear upon that problem area they become relevant.

THOUGHTS ON IDENTIFYING "SIGNIFICANT" RESEARCH PROBLEMS IN MUSIC EDUCATION

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Office of Research Services
Phi Delta Kappa

What is a significant research in music education? It takes a high degree of arrogance for a person with a tin ear to attempt an answer to that question. But since I have never been accused of timidity, and with the encouragement from our Conference Director, I rush in where angels fear to tread.

I would like to focus my comments on three topics. What is meant by "significant" in the phrase "significant research in music education"? What are the differentiating elements between a science and a practice science? And finally, what are the elements of the practice science -- music education -- which require systematic investigation?

The term 'significant' has several uses in our technical talk about the science of education. One of these has a very precise meaning -- the degree of probability or improbability associated with a statistic descriptive of some accumulated data. Other uses are less precise. Sometimes we mean social value and sometimes, the difficulty or rigor of the research.

I submit that we, as researchers, are a group of individuals interested in the careful generation of data upon which to base decisions about the truth of hypotheses. In this we strive for clarity and precision as we isolate and study variables. How such a group can condone such fuzzy word usage as 'significant' is beyond me. 'Significant' meaning social value can be precise only if we can agree on a standard value system for all of us. We cannot hope to use varying value systems to predict into the future and arrive at the degree of 'significance' of a single study or line of study.

To comment on the second fuzzy use of the term 'significant' -- the difficulty or rigor of a project -- I would like to share with you a letter to the editor of the Manchester Guardian. We frequently hear persons indicating that a given piece of research isn't worth doing because it lacks sophistication. I quote:

> Sir, -- What does "sophisticated" mean? During a period of 10 days, either in the Guardian or on the BBC, the word was used in the following contexts: we heard of a sophisticated ant, a sophisticated heron, sophisticated music, and sophisticated youth; there was 'ironic sophistication in the air as of people's (sic) bamboozled'; we were warned of 'a sophisticated version of the familiar threat of withdrawal from the Commonwealth'; a parachute was 'so sophisticated and sensitive that it frightens the life out of you'; we

> were informed that the quality of education was 'measurable by sophisticated sampling'; and a small boy surprised his audience by coming to a 'sophisticated conclusion.'
>
> The French, it seems, have produced 'a sophisticated rocket, but it works'; and one of our entertainers danced 'with sophisticated abandon.' We were troubled to learn that our aircraft industry faces 'sophisticated problems'; but more ominous was your correspondent's view that the recent sabotage on the Zambia power line had obviously been carried out by fairly 'sophisticated people.' Nevertheless we were comforted to hear that the Prime Minister had sent a 'sophisticated air squadron' to Ndola.
>
> Is this a new 13-letter swear word or is it an escape for clever folk who don't know what they mean or what they say? What does the word mean? Chambers' latest edition says: 'Adulterated: impure: not genuine: falsified (sic) artificialised: worldly-wise and disillusioned.' Apply these definitions to ants, herons, small boys, and saboteurs!
> Yours, etc.,
>
> E. B. Castle
>
> Corfe Castle
> Dorset[1]

If we delete the words 'sophisticated' and 'significant' from our vocabulary, what replaces it in our consideration of research? On what basis do we assign priorities and take actions in support of this project, or against that one? To resolve this question, I turn to my second topic, the differences in the nature of a science and a practice science and to the third, the components of our practice science. My goal in this is first to suggest a general goal of research in music education and, second, to enumerate some of the variables about which information is needed.

Our concern about research in music education, I believe, is closely related to a statement made by Mrs. Florence Wald, Dean of the School of Nursing at Yale University. Dean Wald was the recipient of a research training grant designed to stimulate research on the part of the Yale School of Nursing faculty. After working at this for sometime, she developed a concern for the direction in which their studies focus. Frequently studies were developed which seemed to have more focus on the basic science than on the work of the nurse. According to Wald:

> The important point to be understood is that there is an essential difference between the study of professional practice and the "basic" scientist's practice of his academic discipline...the difference lies in the selection of variables for study and the kind of hypotheses that are entertained. In other words, the difference is in the kind of theory they are testing.
>
> As an example of these differences in approach, we can look at the question of pain in human beings. The physiologists ask, 'Are there substances in the human inflammatory exudate and plasma which are themselves pain producing; that is, how is pain caused?...Do different body areas have dissimilar levels of threshold for the sensation of pricking pain; that is, how is the pain experienced?'...the social scientist...asks, 'Do people in different cultures respond differently to pain?'
>
> On the other hand, the practitioners ask a different kind of question in approaching the same phenomenon..."How can we relieve pain? By using counter irritants? Which are the most effective?...Can hypnosis relieve the pain heretofore

> considered 'intractable'?...Does the request for pain medication really mean the patient has pain? Will the patient be more relieved with or without medication if the nurse approaches him in an exploratory, deliberative way?"[2]

This does not mean that the practice scientist's research has no relevance for the pure scientist. Nor does it mean that the practice scientist is not interested in the findings in pure science. Such findings are still the content of his practice. It is, instead, an indication that there is a different kind of knowledge central to the work of the pure scientist and the practice-oriented professional and that this different knowledge is the stuff upon which research of the practice scientist ought to focus. Repeated clinical evidence bases the assertion that it takes a different kind of knowledge about a subject to teach it than it does to otherwise use the subject. The work of the music practice scientist should center then on the identification of the knowledge and skills needed by the music teacher that are not needed by the musician, consumer, composer, historian, or theoretician. With such knowledge, a practice theory of music education can be built.

To further indicate the differences between a practice science and a pure science, Wald states the following description of a practice theory:

> Any scientific theory, whether a theory of practice or not, begins with concepts naming classes of events in nature, and questions or even hypotheses about how these concepts relate to each other. These concepts and hypotheses may come from anywhere, but we are proposing that for the building of nursing practice theory they should come in part from actual nursing experience and that they must be tested by actual nursing experience.
>
> Practice theory is not only limited to causal hypotheses but is further restricted to the use of causal variables that can be manipulated by the practitioner.[3]

It is my firm belief that we need a practice theory in education and in the concentrations in this field, such as music education, science education, etc.

In attempting to enumerate the elements of such a practice theory, I first asked myself what problems would be found in our practice science. This is for me a terrible distraction. A few years ago I attempted to develop an instrument for evaluating the quality of educational research. In this work I tried to develop criteria for evaluating the problem. As I scoured texts on the research process, I became both amazed and amused at the way in which we define what a problem is.

Others take a show-them-a-list approach at defining what a problem is. In this attempt a lengthy and diverse list of dissertation titles is displayed. Again the admonition is stated that you probably should not touch these, but rather use this list to help you develop a general understanding of what a problem is. I never could see sufficient common elements in these lists. When I add to that the prior experiences I've had in selecting documents by titles alone, I quickly dismiss this technique of defining the term 'problem.'

I did -- in my search -- encounter one statement that helped. An outline prepared by David L. Clark, Egon Guba, and Gerald R. Smith, as they started to write a textbook on the research process, defined a problem as one of four situations: an anomaly, an unverified "fact," conflicting evidence, or an uncharted area.[4]

An educational anomaly exists in those situations in which all of the ingredients for learning exist: a good teacher, interested students, adequate materials, appropriate procedures, etc.; yet, no learning takes place. For example, not long ago I heard the superintendent of an outstanding school system say that the standardized test results of their elementary grades have been the same year after year for a decade. This is a school that has adopted proven innovations during that time; yet, no change occurred. Its teachers are the cream of the crop. The societal push encourages learning. The latest and soundest learning materials are added to the system. Yet, no change in achievement is observed. By all the knowledge we currently have, the achievement scores should increase. They have not. Mr. Superintendent, you have an anomaly.

The educational profession is undergirded with unverified "facts" -- those instances in which a procedure has been conducted for so long that it has been legitimatized; it is a "fact." One example should suffice. Most schools teach children to put their words down on paper first through manuscript printing and then transfer to cursive writing at about third grade. There is not one bit of systematically generated evidence in our professional literature that verified either that we should start with manuscript printing or that third grade is the best transition time. Yet, it is an accepted fact that writing is taught in this manner.

Conflicting evidence situations are also numerous in the field of education. The reading research area provides a good example, as it not only exhibits considerable conflicting evidence, but also leads to a procedural insight. Many man-hours, children-hours, and words have been invested in the attempt to determine whether the phonetic or rote approach is more effective in teaching reading. One study says phonics is best; another says rote;[2] etc. If you tallied all such studies, neither side of the argument could display a superiority over the other. The evidence is conflicting and a problem exists.

Two possibilities exist in an instance of conflicting evidence. Either truth was not obtained in the studies central to the conflict or another variable, or set of variables, exists which is more central to the problem being investigated. Both avenues should be explored through further research.

The uncharted areas category of problem ought not to need further definition. Too often research is done on a problem assumed to be "uncharted" before a real effort is expended to learn whether others have studied the problem.

Given the recognition of one of these four situations and a thorough investigation of what is currently known about it, the researcher should come to one of three levels of knowledge about his problem: (1) he needs to learn what variables comprise the problem; (2) he needs to know what distribution is found on these variables; (3) he needs to know the cause and effect relationship between these variables. When this is achieved, the researcher has identified a problem which merits systematic investigation; "significant research," if you will.

To return to our discussion of theory development, some categories of variables can be identified and structured into a practice theory. As a start, I would like to list five factors, each of which possess numerous levels. These factors are:

1. Personnel in music education.
2. Materials in music education.

3. Processes of music education.
4. Objectives of music education.
5. Outcomes of music education.

To structure a practice theory, we need to accumulate information of three types: (1) the number of levels (or variables) in each factor; (2) the characteristics along each of these levels; and, (3) the interrelationships or interactions among the levels.

The first factor, personnel, seems to me to have numerous sub-levels which could be called types or roles. We need to know what types or roles exist and the characteristics descriptive of them.

To help build a conceptual model for this practice theory, I would suggest a technique that Ray Dethy and I developed about five years ago. When we need to analyze a complex activity, we frequently use a grid. We search for appropriate terms to label the rows and another set to label the columns. Quite by accident, Dethy and I once structured a grid in which we labeled both the rows and columns with the same terms. The technique has proven beneficial to us in conceptualizing about a complex activity, so effective that we have named the technique. We call it an intergrative theonomy.

For our discussion today, we would have a grid with five rows and five columns, labeled as shown below:

	Personnel	Materials	Processes	Objectives	Outcomes
Personnel	I				
Materials		II			
Processes			III		
Objectives				IV	
Outcomes					V

To build our practice theory of music education, we must start with the diagonal squares, that is, the intersection of a row and column with the same label. Our task here is definitional and taxonomic. We need to establish a definition for the term and identify the types or characteristics subsumed beneath it. To be explicit, let's consider the personnel term. I would define it as those individuals who either individually or in groups are engaged in, or influence music education. We can quickly identify a number of roles or types under this definition: teachers at all levels, students, researchers, administrators, supervisors, etc. We need two types of research at this point. Are there other types of personnel? And, what are the characteristics of these personnel that are relevant to or critical in music education?

This process must be repeated for each square on the diagonal of the integrative theonomy. Then we can look at the other squares. For example, the square at the intersection of the row labeled materials and the column labeled personnel suggests that we tend to the interactions possible between these two terms. If we change materials, what effect will we see on personnel? If we change personnel, what does this require in materials?

It is altogether possible that some of the interaction squares will remain empty as the elements of our practice theory get filled in. However, we should knowingly leave them empty, rather than simply to skip them.

Since I am neither a music educator nor a musician, I shall close by denying that what I have said specifies the elements of a practice theory for music education. In other words, I suggest that this group should -- if it chooses to use the integrative theonomy approach -- decide on the nature and number of major labels. Regardless of whether this or another approach to practice theory development is chosen, you have a good deal of work to do. God speed!

References

1. Castle, E. B. "Thirteen-letter Word," Manchester Guardian, 1966. (A letter to the Editor.)

2. Wald, Florence S., and Robert C. Leonard. "Towards Development of Nursing Practice Theory," Nursing Research, 13(Fall, 1964), 309-13.

3. Ibid.

4. Clarke, David L., Egon G. Guba, and Gerald Smith. "Functions and Definitions of Functions of a Research Proposal or Research Report." Unpublished Ms. (mimeo.), Columbus, Ohio: The Ohio State University, 1962.

THE STATUS OF RESEARCH IN MUSIC EDUCATION

Erwin H. Schneider
The Ohio State University

Preface

The report to the Conference concerning the status of research in Music Education was an oral discussion of the tables which follow. The objective was to give the Conference some idea of the kind of research performed in Music Education as well as other information about the condition of that research. It was recognized that surveys of this kind can be considered indicative only and not accurately descriptive of conditions. Another question of interpretation which was fundamental to the formation of the data and tables was the definition of the term 'music education.' Substantially, the definition by Cady found on page 62 of this report was the operational definition used in selecting the studies represented in these tables. It also was recognized that another definition may have led to other sets of data and forms for the tables.

As a means for making comparisons, this paper is divided into two parts. Part I is a series of tables derived from the Schneider-Cady study, "Evaluation and Synthesis of Research Studies Relating to Music Education," U.S. Office of Education Cooperative Research Project Number E-016, which covered the period 1930-1962. Part II contains tables of a parallel nature to those of Part I and includes data gathered for the period of time subsequent to that covered in Part I. An appendix contains the documents used for obtaining the information on research in the period 1963-1966.

The tables are presented here without commentary. It is believed that conclusions derivable from them are self-evident.

Part I: The Period, 1930 - 1962

TABLE I

TOTAL NUMBER OF TITLES (1930-1962) BY KIND OF REPORT INITIALLY IDENTIFIED AS POSSIBLY BEING RESEARCH RELATED TO MUSIC EDUCATION*

Kind of Report		Number
Dissertations		691
Theses		7085
Published Documents		1043
Unpublished Documents		100
	Total	8919**

* Sources of Data: Titles obtained from 708 bibliographic sources, 273 research reports, and from 135 cooperating Colleges and Universities.

** An additional 2660 titles were judged to be not relevant to music education (acoustics, church music, dance, etc.).

TABLE II

NUMBER AND PER CENT OF 1818 TITLES (1930 - 1962) JUDGED TO BE RELEVANT TO MUSIC EDUCATION

	Relevant		Not Relevant		
Kind of Report	No.	Per Cent	No.	Per Cent	N
Dissertations	422	71.40	169	28.60	591
Thesis	185	87.26	27	12.74	212
Published Documents	661	64.87	327	35.13	988
Unpublished Documents	18	66.67	9	33.33	27
Totals	1286	(70.73)	532	(29.27)	1818

TABLE III

NUMBER AND PER CENT OF 1286 RELEVANT TITLES (1930 - 1962) JUDGED TO BE COMPETENT RESEARCH AND SELECTED FOR REVIEW AND/OR ABSTRACTING

Kind of Report	Competent		Not Competent		N
	No.	Per Cent	No.	Per Cent	
Dissertations	182	43.12	240	56.88	422
Theses	40	21.62	145	78.38	185
Published Documents	51	7.71	610	92.29	661
Unpublished Documents	0	0.00	18	100.00	18
Totals	273	(21.22)	1013	(78.78)	1286

TABLE IV

DISTRIBUTION BY TYPES OF RESEARCH OF THE 273 REPORTS (1930 - 1962) FOUND TO BE RELEVANT AND COMPETENT RESEARCH IN MUSIC EDUCATION

Type of Research	Frequency
I. Descriptive	
Survey and Structured Interview	10
Survey Questionnaire	133
Standardized Tests	27
Document Analysis	16
Data Analysis	15
II. Experimental	
Single Group Technique	21
Control-Experimental Group	35
Multiple Groups	8
Test Construction	8
Total	273

TABLE V

DISTRIBUTION OF THE 273 REPORTS (1930 - 1962) FOUND TO BE RELEVANT AND COMPETENT RESEARCH ACCORDING TO DELINEATED CATEGORIES OF MUSIC EDUCATION

Categories*	Number
The Teacher	69
The Student	67
Teaching-Learning Process	62
Constraining Elements	38
Programs in Music Education	37
Total	273

* See Schneider-Cady, pp. 27-32.

Part II: The Period, 1963 - 66

TABLE VI

TOTAL NUMBER OF TITLES (1963 - 1966) BY KIND OF REPORT TENTATIVELY IDENTIFIED AS POSSIBLY BEING RESEARCH RELATED TO MUSIC EDUCATION*

Kind of Report	Number	Percent of Total
Dissertations	156	29.05
Theses	270	50.27
Published Documents	33	6.14
Unpublished Documents	36	6.71
Not Reported	42	7.83
Totals	537**	100.00

* Sources of Data: Dissertation Abstracts (Jan. 1963 - Oct. 1966); Bulletin of the Council for Research in Music Education; Journal of Research in Music Education, and titles from 56 cooperating Colleges and Universities. (Questionnaire sent to appropriate person in the music departments of 278 institutions.)

** An additional 462 titles (129 dissertations, 306 theses, and 27 other documents) which were judged to be not relevant to Music Education were reported by Colleges and Universities.

TABLE VII

TYPES OF RESEARCH REPORTED BY RESPONDENT FOR THE 537 TITLES (1963 - 1966) JUDGED TO BE RELEVANT TO MUSIC EDUCATION

Type of Research	Number	Percent of Total
Descriptive	276	51.38
Historical	54	10.05
Experimental	111	20.67
Philosophical	54	10.05
Not Given	42	7.82
Total	537	99.98*

* Does not equal 100.00 because of rounding.

TABLE VIII

TYPES OF RESEARCH REPORTED BY RESPONDENT BY KIND OF REPORT FOR THE 537 TITLES (1963 - 1966) JUDGED TO BE RELEVANT TO MUSIC EDUCATION

	Types of Research			
Kind of Report	Descriptive	Historical	Experimental	Philosophical
Dissertations	70	26	47	13
Theses	169	22	46	33
Published Documents	10	6	14	3
Unpublished Documents	27		4	5
Unknown (42)				
Totals	276	54	111	54

Grand Total (495 plus 42) = 537

TABLE IX

SPECIFIC TYPES OF RESEARCH REPORTED BY RESPONDENT FOR THE 537 TITLES (1963 - 1966) JUDGED TO BE RELEVANT TO MUSIC EDUCATION

Specific Type of Research	Number		Percent	
I. Descriptive				
Survey	182		33.89	
Interrelationships	34		6.33	
Developmental	13		2.42	
Not Classified	35		6.51	
Combination	4		.74	
Total		268		49.89
II. Historical				
Documentary	34		6.33	
Artifacts	2		.37	
Not Classified	4		.74	
Combination	4		.74	
Total		44		8.18
III. Experimental		108		20.11
IV. Philosophical				
Analysis	8		1.48	
Criticism	2		.37	
Speculation	23		4.28	
Not Classified	9		1.67	
Combination	11		2.04	
Total		53		9.84
V. Combinations(I, II, III, IV)		19		3.53
VI. Not Given		45		8.37
Totals		537		99.92*

* Does not equal 100.00 because of rounding.

TABLE X

SPECIFIC RESEARCH TECHNIQUES REPORTED BY RESPONDENTS AS EMPLOYED IN THE 537 TITLES (1963 - 1966) JUDGED TO BE RELEVANT TO MUSIC EDUCATION

Technique	Descriptive	Historical	Experimental	Philosophical
Questionnaire	105	5	5	5
Interview	47	12	1	4
Appraisal Instruments	43	2	31	3
Observation	41		8	8
Document Analysis	77	42	4	34
Statistical Analysis	18		10	2
One-Group Method	10		22	
Equivalent Groups	4	1	39	
Rotation Groups	1		3	
Multiple Groups	5		9	
Test Construction	3		12	
Totals	356	62	144	56

Grand Total = 618*

* Grand total includes duplicate listings of those studies using several techniques.

TABLE XI

DISTRIBUTION OF THE 537 TITLES (1963 - 1966) JUDGED TO BE RELEVANT TO MUSIC EDUCATION ACCORDING TO DELINEATED CATEGORIES OF MUSIC EDUCATION RESEARCH

Categories	Number
The Teacher	39
The Student	104
Teaching - Learning Process	187
Constraining Elements	94
Programs in Music Education	113
Total	537

TABLE XII

KIND OF GRADUATE DEGREE FOR WHICH THE 537 TITLES (1963 - 1966) WERE ACCEPTABLE AS A REQUIREMENT AS REPORTED BY RESPONDENT

Kind of Degree	Number	Percent of Total
Master of Music	115	21.41
Master of Arts	63	11.73
Master of Science	46	8.56
Master of Music Education	41	7.63
Master of Education	38	6.70
Master of Fine Arts	4	.74
Master of Arts -- Education	2	.37
Doctor of Education	99	18.43
Doctor of Philosophy	43	8.00
Doctor of Musical Arts	7	1.30
Doctor of Music Education	1	.18
Not Given	78	14.52
Totals	537	99.57*

* Does not equal 100.00 because of rounding.

TABLE XIII

MAJOR AREAS OF STUDY FOR THE 537 TITLES (1963 - 1966) JUDGED TO BE RELEVANT TO MUSIC EDUCATION AS REPORTED BY RESPONDENT

Major Area	Number	Percent of Total
Music Education	337	62.75
Music	15	2.79
Music Theory	1	.18
Education	5	.93
Elementary Education	1	.18
Educational Administration	1	.18
College Teaching	1	.18
Not Reported	176	32.77
Totals	537	99.96*

* Does not equal 100.00 because of rounding.

TABLE XIV

MAJOR STUDY AREA OF STUDENTS WHOSE THESES AND DISSERTATION TITLES (1963 - 1966) WERE NOT JUDGED TO BE RELEVANT TO MUSIC EDUCATION

Major Area	Number	Percent of Total
Music Education	199	56.54
Music	91	25.85
Music Theory	16	4.53
Orchestral Instruments	11	3.14
Voice	5	1.42
Music History	4	1.15
Piano	4	1.15
Musicology	4	1.15
Composition	2	.57
Organ	2	.57
Church Music	1	.28
Sacred Music	1	.28
Applied Music	1	.28
Educational Administration	7	1.99
Education	1	.28
Secondary Education	1	.28
Humanities	1	.28
College Teaching	1	.28
Totals	352	99.98*

NOTE: Major areas not reported for 83 titles and 27 titles were not theses or dissertations. Grand total thus would be = 462.

* Does not equal 100.00 because of rounding.

Appendix

The following documents were used to obtain the data included in Part II of this report. It should be stated that the form used to obtain information about research in the period 1963 - 66 was similar to that used for obtaining data in Part I.

1. Cover letter
2. Report Form
3. Glossary of Terms

THE OHIO STATE UNIVERSITY
SCHOOL OF MUSIC
1899 NORTH COLLEGE ROAD
COLUMBUS, OHIO 43210

LEE RIGSBY, *Director*

FROM: Henry L. Cady, Director
Conference on Research in Music Education

RE: Compilation of data for an analysis of research in music education completed between January 1, 1963 and September 30, 1966.

DATE: November 14, 1966.

Recently a questionnaire concerning graduate programs in Music Education was sent to your institution. The information obtained by the questionnaire will be used in the Conference on Research in Music Education which is sponsored by the United States Office of Education. This communication is a request for your aid in acquiring another kind of information for the use of the Conference.

The purpose of this endeavor is to obtain a realistic understanding of the current state of research in music education. The study recently completed by Erwin H. Schneider and this correspondent has given an indication of the state of research in the period 1930 - 1962. However, there is no compiled data for the period since 1962. It is known that there has been a substantial increase in the quantity of degrees in our field since 1962. What this means in terms of research is known only in the individual institutions granting the degrees. Therefore we seek your aid.

You are urged to use the enclosed forms and to fill in all sections of them. As you will note, an effort has been made to include all types of research and to provide an objective means for reporting an analysis of the documents listed. Local variations on the forms will make the synthesizing task here more difficult. It is realized that some of the information about the research reported will have to be supplied by the persons connected with the writing of them. Please use the form with the BLUE check for reporting faculty research.

The task which we ask you to undertake would not be necessary if there were less opinion and more fact about what is happening in music education research. The data you supply will be fundamentally important to the Conference on Research in Music Education. Please return the forms by January 1, if possible. The data must be ready for analysis by January 15.

The attached "Glossary of Terms" was developed from many sources. It is intended to be of assistance to you in listing the analyses of research reports. Perhaps it will be of use to you beyond an application to the enclosed forms.

CONFE E C RESEA IN IC ATI
Office of Music Education Research
The Ohio State University

Research Relating to Music Education

(Institution Reporting)

Please use the following form for your report.
Additional sheets should also use this form.

FOR OF D NT

- **A. Dissertation (Doctoral)**
- **B. Thesis (Master's)**
- **C. Published Document (specify source)**
- **D. Unpublished Document (specify source)**
- **E. Seminar Paper (specify source)**

KE TYP TE

TYPES:

- **I. DESCRIPTIVE**
  - **A. Survey**
    - **1. existing status**
    - **2. comparisons of**
    - **3. methods of impr**
  - **B. Interrelationship**
    - **1. case study**
    - **2. causal comparati**
    - **3. correlation stu**
  - **C. Developmental**
    - **1. growth study**
    - **2. trend study**

Author	Title	Completion	Degree	Major	Dept.	Type of Document	Typ Tech of Re
Sample: Jones, James J.	Two Methods of Teaching the Sonata-Allegro Form at the Sixth Grade Level	1966	M.M.E.	M.Ed.	Ed.	B	III,

CATI[illegible]
arch

tion

[illegible] FOR [illegible] OF D[illegible]NT

- A. Dissertation (Doctoral)
- B. Thesis (Master's)
- C. Published Document (specify source)
- D. Unpublished Document (specify source)
- E. Seminar Paper (specify source)

KE[illegible] TYP[illegible] TEC[illegible]ES O[illegible]ARCH

TYPES:

- I. DESCRIPTIVE
  - A. Survey
    - 1. existing status
    - 2. comparisons of status
    - 3. methods of improv. status
  - B. Interrelationship
    - 1. case study
    - 2. causal comparative study
    - 3. correlation study
  - C. Developmental
    - 1. growth study
    - 2. trend study
- II. HISTORICAL
  - A. Documentary
  - B. Artifacts
- III. EXPERIMENTAL
- IV. PHILOSOPHICAL
  - A. Analysis
  - B. Criticism
  - C. Speculation

TECHNIQUES:

- a. Questionnaire
- B. Interview
- c. Appraisal Instruments
- d. Observation
- e. Document Analysis
- f. Statistical Analysis
- g. One-group Method
- h. Equivalent-group Method
- i. Rotation-group Method
- j. Multiple-group Method
- k. Test Construction

	Completion	Degree	Major	Dept.	Type of Document	Type and Technique of Research	Specify Source
Sonata- h Grade	1966	M.M.E.	M.Ed.	Ed.	B	III,h	Eastern Ohio University Library

The Ohio State University
School of Music

The Conference on Research in Music Education
Henry L. Cady, Director

GLOSSARY OF RESEARCH TERMS*

(Initial Draft)

Contents

Terms for Types of Research
Terms for Techniques of Research
Bibliography

Compiled, Formulated and Edited:

Henry L. Cady
Aaron Hyatt

November, 1966

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Preface

As one examines the numerous descriptions of research types and the nomenclature applied to these types as well as to their procedures, he finds variety and inconsistency. It seems that a true categorization of research types and of basic research procedures has never been developed thoroughly. Nor has there been developed a consistent nomenclature for one type of research or another. Regrettably, much of the thinking has not been clear in differentiating types of research from research procedures and what constitutes a variation on a kind of research or kind of research procedures.

It is hoped that the attached glossary will simplify the task of deciding these issues. There is no assumption that this should be considered definitive. At best, it is a tool for a limited purpose and an initial step. It clearly omits some aspects of research methodology. The bibliography is supplied to indicate the scope of the literature on which this glossary is based.

Henry L. Cady

TYPES OF RESEARCH

I. Descriptive Research: To collect evidence on the basis of some hypothesis or theory, carefully tabulate and summarize the data, and then thoroughly analyze it in an endeavor to draw meaningful generalizations that will advance knowledge.

A. Survey Studies: To collect detailed descriptions of existing phenomena with the intent of employing the data to justify current conditions and practices or to make more intelligent plans for improving social, economic, or educational conditions and processes. The objective may not merely be to ascertain status, but also to determine the adequacy of status by comparing it with selected or established standards, norms, or criteria.

1. Existing Status: To collect detailed descriptions of existing phenomena with the intent of ascertaining current conditions and practices or making judgments about social, economic, or educational conditions and processes.

2. Comparisons of Status: To determine the adequacy of status by comparing it with selected or established standards, norms, or criteria.

3. Methods of Improving Status: To collect information from others as to how they have solved similar problems in order to obtain information that will assist in the improvement of an existing situation.

B. Interrelationship Studies: To collect not only information about existing status, but also endeavor to trace interrelationships between the facts obtained to gain a deeper insight into the phenomena.

1. Case Study: To make an intensive investigation of the complex factors that contribute to the individuality of a social unit - a person, family, group, social institution, or community.

2. Causal Comparative Studies: To discover not only what a phenomenon is like, but, if possible, how and why it occurs. They compare the likenesses and differences among phenomena to find out what factors or circumstances seem to accompany certain events, conditions, processes, or practices.

3. Correlation Studies: To ascertain the extent to which two variables are related, that is, the extent to which variations in one factor correspond with variations in another.

C. Developmental Studies: To not only be concerned with the existing status and interrelationships of phenomena, but also with changes that take place as a function of time. They describe variables in the course of their development over a period of months or years.

1. Growth Studies: To determine the nature and rate of changes that take place in human organisms.

2. Trend Studies: To obtain social, economic, or political data and analyze it to identify trends and to predict what is likely to take place in the future.

II. Historical Research: To present an accurate account of the past in order to aid "in the interpretation of the future." Modern historical research is critical; it is a search for truth.

A. Documentary: To collect, examine, select, verify, and classify facts in accordance with specific standards, and endeavor to interpret and present those facts in an exposition that will stand the test of critical examination.

B. Artifacts: To collect, examine, select, verify, and classify artifacts in accordance with specific standards, and endeavor to interpret and present those artifacts in an exposition that will stand critical examination.

III. Experimental Research: To deliberately manipulate certain factors under highly controlled conditions to ascertain how and why a particular condition or event occurs, and to observe and interpret the ensuing changes.

IV. Philosophic Research: To study ideas for the purpose of determining the significance of meanings in terms of their relevance to the assessment and forging of those fundamental ideas that guide programs of reflection and conduct.

A. Analysis: To examine the meanings and relationships of ideas. The analytic function searches out the implications of assertions, their consistency, and the assumptions involved in a body of theory.

B. Criticism: To examine basic alternative modes of life and thought. The formulation of these alternatives thus presents the basic choices which confront us and thereby the task of evaluation is created.

C. Speculation: To examine the imaginative and visionary aspect of philosophic studies in order to find constructions of ideal futures, projections of desirable societies, experiences and ends for mankind.

TECHINQUES OF RESEARCH

a. Questionnaire: The questionnaire is a form with carefully selected and ordered stimuli that will elicit the data required to confirm or disconfirm a hypothesis.

b. Interview: The interview is, in a sense, an oral type of questionnaire. However, through personal contact and the use of auditory and visual cues, the interviewer can probe more deeply into a problem.

c. Appraisal Instruments: The use of scales, tests, inventories and other tools to obtain data. This might also include sociometric and projective techniques.

d. Observation: To obtain the desired information through direct, objective, and reliable observations.

e. Document Analysis: To explore existing records for facts concerning qualitative and quantitative studies.

f. Statistical Analysis: To explore existing and/or newly discovered data concerning qualitative and quantitative studies.

g. One-group Method: The researcher observes his subjects' performances before and after he applies or withdraws an experimental variable and measures the amount of change, if any, that takes place.

h. Equivalent-group Method: This method simultaneously utilizes two equivalent groups of subjects. One group, which is called the control group, serves as a reference from which comparisons are made.

i. Rotation-group Method: This method is commonly employed in situations where a limited number of subjects are available or where a comparison of teaching methods is made. The first stage of a rotation-group method is the same as the equivalent-group method; the second stage, the groups rotate their roles.

j. Multiple-group Method: The use of three or more groups, using some variation of the experimental factor between the groups.

k. Test Construction: The process of developing a standardized instrument which will measure a specific variable(s) in human behavior.

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A FRAMEWORK FOR EVALUATING COMPARATIVE STUDIES

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Introduction

Assessing the quality of research, a long standing concern on the part of a few educators, has become a more important activity with the increase in the quantity of educational research and the growing interest in greater scientism on the part of the profession. It is easy to gain general acceptance of the idea that the soundness of the knowledge gained from a research effort is directly proportional to the soundness of the research techniques employed. Obtaining this concensus does not, however, provide much guidance for determining the quality of a given study.

The authors have based this paper on the premise that methodological adequacy of research can be judged through three factors: (1) the nature of the logical argument inherent in the study; (2) the degree of control exerted in the data generation process; and (3) the analysis procedures utilized. The remainder of this document is devoted to an elaboration of the first two of these factors so that a basis for quality judgment might be established.

The Logical Argument in Comparative Studies

While the actual process of doing research may not, at times, appear particularly logical and may seem to involve as much chance as purpose, the reporting of research findings should contain a logical argument. If one is to become competent in using and interpreting research results he must then become competent in identifying the logical pattern of the research report and in identifying and specifying possible sources of invalidity in the chain of argument that leads to the writer's conclusions. Furthermore, should one become a doer as well as a user of research, he will do a better job of reporting his work if he has an understanding of scientific logic.

Simply stated, logic is the study of the rules of argument. Put another way, it provides methods for relating a series of statements into a coherent, internally valid pattern of thought, leading from assumptions and observable facts to valid conclusions. The statements which make up an argument are referred to as premises and conclusions. A pattern of statements which make up a complete argument is called a syllogism.

To begin with, a more complete description of what is meant by "a statement" is necessary. A statement states or asserts that something is the case and thus may be either true or false. Modern usage puts statements into four categories:

1)	Categorical	A is B.
2)	Hypothetical[1]	If p[2], then q.
3)	Disjunctive	Either p or q or both are true.
4)	Alternative	Either p or q, but not both, is true.

The first asserts that something is unconditionally true about the world, while the latter three assert unconditionally that something is true of the relationships between parts of the statement and only conditionally that something is true of the world. Also, note that the first is a statement relating individual terms while the others are statements about statements. In addition, of course, combinations of these four types may be found, such as, "If p or q but not both, then r."

The relations which hold among various kinds of statements determine the ways in which one may move from one statement to another, i.e., the inferences one may make. Consider the two statements:

1) All A are B.

2) Some A are B.

The truth of 1), All A are B, implies the truth of 2), Some A are B. The falsity of 2) implies the falsity of 1). However, the truth of 2) or the falsity of 1) tells nothing of the truth or falsity of the other statement. Try substituting terms for A and B which either make 1) true or 2) false and test whether the truth or falsity of the other does not inevitably follow.

One may examine statements such as numbers 1) and 2) above in a more graphic way by drawing what is called a Venn diagram. Statement 1) may be pictured as follows in Figure 1:

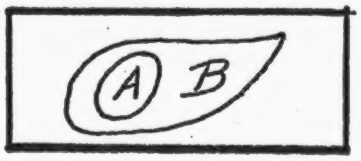


Fig. 1.--Statement 1) All A are B.

While Figure 1 may represent the situation when statement 2) is true, so also might Figure 2 as follows:

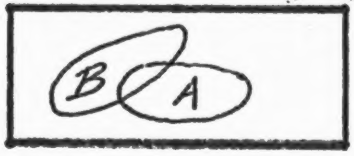


Fig. 2.--Statement 2) Some A are B and
Statement 4) Some A are not B (see below).

Thus the truth of 2) Some A are B tells nothing with certainty about the whole truth of 1) All A are B.

Consider another pair of statements:

3) All A are B.

4) Some A are not B.

If one closely examines the relationship which exists between these two statements, he will note that the truth of either one implies the falsity of the other. These statements are contradictory. Using the Venn diagrams, statement 3) is represented by Figure 1 and 4) by either Figure 2 or 3.

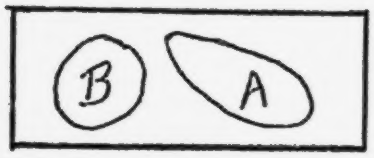


Fig. 3.--Statement 4) Some A are not B.

Yet another relationship among statements is exemplified by statements 5) and 6):

5) All A are B.

6) No A are B.

Examination of these two statements will reveal that, while the truth of one of these implies the falsity of the other, both may not be true at the same time. However, knowing that one is false reveals nothing about the truth value of the other. In this case we say that the two statements are contrary as illustrated in Figures 4, 5, and 6.

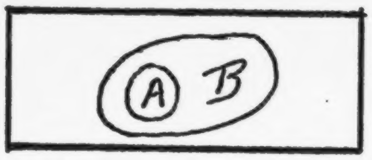


Fig. 4.--Statement 5) All A are B.

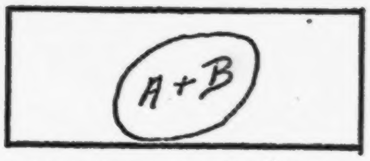


Fig. 5.--Statement 5) All A are B.

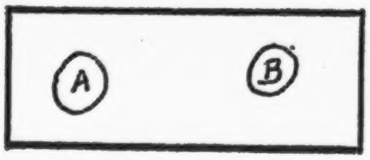


Fig. 6.--Statement 6) No A are B.

Combinations of statements can be illustrated through an example relevant to comparative studies in education. In such a case one can, in effect, make two statements.

> Modern math is a more effective curriculum (A is B);
>
> If modern math is a more effective curriculum, then certain significant differences should be observable (if A is B, then C).

Statements may be transformed in a variety of ways into new statements which may make the building of a valid argument or the criticism of an invalid one more understandable. For example:

All A are B. $\Rightarrow$ If x is A then x is B. $\Rightarrow$ Either x is B or not A.
(the symbol, $\Rightarrow$ means "implies.")

From this short introduction one moves to the core of reasoning, the argument or inference. The set of statements which comprise an inference pattern, a number of premises plus the conclusion to which they lead, is sometimes referred to as a syllogism. Examples of syllogistic inference patterns follow:

	Statement	Abstract Representation
Major Premise	1) All tigers are dangerous.	All A are B.
Minor Premise	2) This animal is a tiger.	This x is A.
Conclusion	3) Therefore, this animal is dangerous.	∴ This x is B.

	Statement	Abstract Representation
Major Premise	1) If students are taught by method A then they will read better than if they are taught by method B.	If p, then q.
Minor Premises	2) These students have been taught by method A.	These x_1 are A.
	These students have been taught by method B.	These x_2 are B.
Conclusion	3) Therefore, these students read better than those taught by method B.	∴ These $x_1 > x_2$.

Both of the above are valid inference patterns, but it must be recognized that this says nothing about the truth or falsity of the conclusions reached. If the tiger which confronts one is old, clawless, toothless, arthritic, and blind, one may feel that the first conclusion is wrong. Similarly, if the average I.Q. of those students taught by method B is 25 points higher than that of those students taught by method A, the truth of the second conclusion might be fallacious. This, however, is not due to a fault in the logic pattern but to the inaccuracy in both major premises. Thus, in evaluating conclusions reached through a logic pattern one must consider both the validity of the inference pattern and the degree to which the various premises are correct or true.

The inference patterns presented above are examples of reasoning from the general to the specific, from all tigers to this tiger, from children in general to these children. This type of inference is termed deductive inference. Probably the best example of the systematic building of a body of knowledge by deductive inference is in mathematics where involved systems are deduced from a relatively small number of axioms, postulates and definitions.

It should be noted in the second example that deductive reasoning is not extremely profitable. In education, one can empirically observe reading skill differences and in so doing have a stronger basis for accepting statement 3), the Conclusion, than if inference is relied on. In fact in education, as in most social science research, one is typically interested in the truth value of a statement about the general condition, i.e., method Y is superior to method Z.

The problem of the educational researcher then is that of making true statements about the world based on finite empirical evidence. This differs from the situation described above in two fundamental aspects. First, the researcher is concerned with making statements about the general from evidence based upon the specific. Second, the scientist, being interested in valid conclusions rather than just an internally valid system, must place heavy emphasis on the truth value of the various premises in his argument. The term used to describe this pattern of logical reasoning is called inductive inference. Alexander[3] describes inductive inference as inference which, by the canons of deductive inference, goes beyond the evidence.

A number of approaches have been taken by various writers in attempting to explain inductive inference. One which is particularly adaptable to later inclusion in ideas about probabilistic or statistical inference is that advanced by Polya[4] which he terms plausible inference or plausible reasoning. Polya's point is that when one constructs a hypothesis to test (the hypothetical statement mentioned previously) he is inevitably put into the position of wanting to draw conclusions about antecedents or generalities from evidence based on the observation of consequents or specifics. This leaves one in the unenviable position of always having some uncertainty in any conclusions that are drawn.

Consider the following inference pattern:

	Statement	Abstract Representation
Major Premise	1) If John is intelligent he will score high on the 4-I* test of intelligence.	If p then q.
Minor Premise	2) John scores high on the 4-I test.	q is true.
Alternative conclusions	3a) No conclusion possible. 3b) Therefore, John is intelligent 3c) Therefore, it is more credible (than it was before the test) that John is intelligent.	No conclusion. ∴ p is true. ∴ p is more credible.

*Ingle Index of Independent Intellectualism

Of the three alternative conclusions, 3a) is the one indicated by classical deductive inference and 3b) is the one we would like to be able to make but, since other possible explanations exist (John guessed extremely well, John had seen the test before, etc.) it is too strong a statement to make. The third alternative 3c) is the one favored by Polya. His position is that by the addition of added secondary or minor premises or controls one can make stronger and stronger statements about the credibility of plausibility of the conclusions reached.

	Statement	Abstract Representation	Source of Truth of Statement
Major Premise	1) If John is intelligent he will score high on the 4-I test of intelligence.	If p, then q.	By assumption (or possibly by evidence presented in test manual.)
Minor Premise I	2) That John could score high (by guessing, by cheating, by being taught the test, etc.) without being intelligent is extremely unlikely (because of the manner in which we have built the test and controlled the taking of it).	q without p is extremely unlikely.	Through control of alternative explanations.

	Statement	Abstract Representation	Source of Truth of Statement
Minor Premise II	3) John scores high on 4-I test.	q is true.	Observation.
Conclusion	4) Therefore, it is very much more credible that John is intelligent.	.˙. it is very much more credible that p is true.	Implied by Premises I-III.

It should be obvious that statement 2) is really a composite of many possible factors which could be separated and put into individual statements or premises. The more factors which are controlled or eliminated, the stronger statement one can make about the credibility of one's conclusion.

Consider the above argument illustrated by means of a Venn diagram in Figure 7 below. Let p be the condition of high intelligence, q that of scoring high on the 4-I test, r that of cheating, s that of guessing and t that of a mistake in scoring the test. The following diagram might result with the overlapping of areas indicating the simultaneous existence of two or more conditions. We are interested in the overlap of areas p and q:

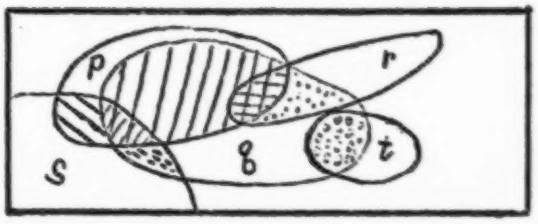


Fig. 7.--Multiple conditions and plausible conclusions.
Observe q, eliminate possibility of r, s, and t.
.˙. p is very much more credible.

Note that p, r, s, and t overlap parts of q and represent possible alternative explanations of q; that, by taking action to control r, s, and t, the probability has been increased (made more credible, made more plausible, increased the likelihood, etc.) that the observed q resulted from p. How much we increase the probability or credibility of p as an explanation of q depends on the extent to which we can eliminate the many extraneous factors as possible alternative explanations of q.

A third pattern of plausible logic exists and should be recognized so that the researcher may avoid it. An example of this pattern can be seen in the case of a teacher who, through a summer school indoctrination on Rogerian theory, saw the possibility of improving achievement through the use of "accepting and reflecting comments." Because the indoctrination carried a somewhat scientific bent, she decided to evaluate systematically the suspected possibility. She administered a standardized test to her class of 32 children at the start of the semester, "uh-uhed" and "You thinked..." all year long, and gave an alternate form of the test at the end. In this case, there is a likelihood that the observed pre- and post- test means scores will be significantly different.

Such a study could be outlined as follows:

	Statement	Abstract Representation	Source of Truth of Statement
Major Premise	If accepting and reflecting teacher comments facilitates learning, then children receiving them will show significant achievement gains.	If p then q.	Suspected to be true from extrapolation of Rogerian theory.
Minor Premise I	It is probable that mean scores on standardized tests taken pre- and post-school year will be significantly different due to maturation.	q is likely regardless of p.	Observations of child growth and achievement.
Minor Premise II	Significant differences were found between pre- and post-test means.	q is true.	Observation.
Conclusion	It is credible that accepting and reflecting teacher comments facilitates learning.	p is very little more credible.	Implied by Major Premise and Minor Premise II.

The following is a summary of the forms of formal and plausible logic which have been discussed in the preceding paragraphs:

Patterns of Inference

A. Formal Logic

(1) (If H, then C) is a true statement.

a. H is true.
Therefore, C is true.

b. H is not true
Therefore, no conclusion about C.

(2) (If H, then C) is a true statement.

a. C is false.
Therefore, H is false.

b. C is true
Therefore, no conclusion about H.

Example: If I am a Catholic, then I am a Christian.

(1)

a. I am a Catholic.
Then I am a Christian.

b. I am not a Catholic.
No conclusion as to whether I am a Christian.

(2)

a. I am not a Christian.
Therefore I am not a Catholic.

b. I am a Christian.
Therefore, no conclusion as to whether I am a Catholic.

B. Plausible Logic

(1) (If H, then C) is a true statement. (Major Premise)

C is observed. (Minor Premise)
H more credible.(Conclusion)

(2) (If H, then C) is a true statement. (Major Premise)
(C without H hardly credible) is a true statement. (Minor Premise I)

C is observed. (Minor Premise II)
H very much more credible. (Conclusion)

(3) (If H, then C) is a true statement. (Major Premise)
(C almost certain anyway) is a true statement. (Minor Premise I)

C is observed. (Minor Premise II)
H very little more credible. (Conclusion)

Factors Determining the Nature of Generated Data

As stated above, the researcher must place heavy emphasis on the truth value of the various premises in his argument if he is interested in valid conclusions rather than in just an internally valid argument. Thus, as he accumulates data upon which to base his inference, he must take every precaution possible to assure the collection of data most representative of reality.

Three factors determine the degree to which accumulated data approximate reality: (1) the nature of the units involved in the observational schema; (2) the treatment experienced by these units; and (3) the manner in which the evidence is collected or recorded.

Consider the following example. A curriculum study has been initiated comparing two methods of instruction. In the process, pupil anxiety was identified as one of the dependent variables. If one uses a paper and pencil test, the data on anxiety will have one form. If, however, each desk is wired and measurements are made through the use of galvanic skin response, the data have a considerably different form. Yet, in both cases evidence was sought upon which a generalization could be based about pupil anxiety. Similar differences could be expected if variation were to occur in the unit involvement and in the treatment. The problem in research is not one of recognizing data differences when gross and obvious changes are made, but rather one of recognizing the effects of subtle invisible changes which alter the picture of reality obtained. To be cognizant of these subtle changes requires an understanding of the three factors enumerated above.

The unit involvement factor incorporates two concerns, namely, who they are and how they were selected for involvement in the study. Both of these concerns are of great importance because researchers or consumers of research are interested in the generality of findings beyond the specific group tested or observed. Thus it becomes imperative that a sample be as true a representation as possible of the population in which an investigator is interested.

With this goal in mind the techniques of sample description and selection become important. Those techniques employed in a given study hinge on the nature of the population of interest. If this is a finite population, two conditions exist. Each of the units in the population can be enumerated and can be described through the use of descriptive statistics in analyzing the population's characteristics on relevant variables. In such a case the most effective sample selection for truly representing the population involves random processes in the selection of units and random assignment of those selected to the various treatment conditions. When non-random procedures are employed, confidence in the representativeness of the sample is significantly reduced. In this case the reference is to existing classroom groups, convenience-selected samples, or purposive samples.

In some cases the population of interest may be so large that complete enumeration and accurate population description are impossible. Such might be the case in a publishing company's research on the vocabulary levels of kindergarten-primary children. In this case the interest is not on the children in a specific metropolitan or rural area or even a state. Given this broad interest, one of three ploys is typically used. Researchers sometimes engage in cluster sampling, identifying this group, that group, and that other group. When these groups are identified via random processes confidence in sample representativeness is enhanced. But, when such groups are selected because one knows the superintendents in Shorewood, Wisconsin, Harper Woods, Michigan, Sterling, Illinois, and Orange School District, Ohio, the general representativeness is destroyed. This latter selection method is frequently used and is the second of the three ploys referred to above.

The third process of selection requires so much preliminary investigation that it is seldom seen in areas outside of opinion polling. This technique involves the selection of a group of individuals who most consistently and accurately display characteristics approximating those of the general population. True representation is not guaranteed by this technique. Correlation between a subgroup and a population on a given set of variables does not predict correlation on other non-related variables.

The advice to researchers afflicted with the oversized or unspecified population problem in a study is simply to aid their consumers (their readers) in the process of generalization by providing data about the sample in the research report. If the researcher explicitly states how the sample was selected and fully describes the sample or the variables relevant to the study, the reader of this research can estimate whether or not the sample approximates the one in which he is interested. "Fully describes" in this case means displaying measures of central tendency -- means or medians, and measures of dispersion such as standard deviations or semi-interquartile range -- for the sample on each variable found through a study of the prior literature to be related to the variables central to the current study. Armed with such information the reader can easily calculate the relationship of his population to the researcher's sample.

One final note about units. Too often experiments are run in which the individual student is incorrectly referred to as the unit. In such a study, an experimental unit is the smallest group that independently receives and is free to act to a treatment. In many situations institutional press and peer pressures are such that a student is not free to experience or to respond. Consider, if you will, an experiment in which the independent variable is discussion group processes with two levels, structured and unstructured discussion. A student in one of the groups cannot be expected to gain insights on materials not covered by the group. Thus, the units in this case are not students but groups of students.

The second factor that determines the nature of the data generated in a research project is the treatment experienced by the units studied. Again there is a range of situations resulting in varying surety that what the researcher said happened really happened. This variety ranges from no control over the treatment to complete programming of the content and sequence of the treatment. The former is usually the case in historical or descriptive studies. Something occurred and one traces its development historically or he describes its status at a given point in time. He may be very exacting in his description or tracing but may have had no control over the happening.

In some experimental studies the same lack of control over treatment unavoidably occurs. Because the aim of an experiment is a cause-and-effect conclusion, lack of control over the treatment reduces the faith one can place in what really happened. For example, in an experimental study of the effects of counseling on peer acceptance of socially rejected youths, the eight counselors were told to do anything that they thought would increase peer acceptability of the counselees. The report of this study fails to describe the range and frequency of the things done. Thus, there is an extremely weak cause-and-effect statement. The peer acceptability of the counseled group changed, i.e., the effect; but one does not know what happened, i.e., the cause which created this effect.

The laboratory experiment of the psychologist or the physical scientist represents the other extreme of treatment control. In some of these cases everything that occurs to a sample is carefully regulated in terms of content and sequence. Thus if there is an observed effect, the cause-and-effect conclusion is clearly specified.

Experimental treatments in education are not as simple to program and administer as are their counterparts in the physical sciences. The experimenter has to contend with such unresolved issues as the "Hawthorne Effect,"[5] "demand characteristics,"[6] and the host of mediating variables described by Campbell and Stanley.[7] Because of these difficulties, two actions are here proposed for the educational researcher. First, every detail of the experimental treatments should be carefully planned by the researcher and those persons he seeks to assist him in administering the treatments. As an aid in this effort, familiarization with and use of PERT (Program Evaluation and Review Technique)[8] or one of the other critical path methods of planning is recommended. Second, we would urge that any deviations from the programmed treatment be recorded by the researcher and his aides and included in the report of the study. Such a procedure assists the research consumer to a fuller understanding of the treatment and thus to a greater insight into cause-and-effect relationships that are observed.

The third factor that determines the nature of generated data is the manner in which observations are recorded or measurements are made. As stated in an easier example, if one studies children's anxiety in schools one could structure his observations through the use of one of the paper and pencil tests of anxiety. He might utilize a self report in which the children are asked to indicate how anxious they feel, or he might wire the chairs in the class room and electronically measure their skin moisture as an indicator of anxiety. The point here is not that one of these measures is necessarily better than the others but rather that they result in different sets of data.

Three points are proposed as guidance regarding the measurement factor. First, that which is observed should be a logical consequence of the truth of the hypothesis to be tested. Second, the measurement techniques should be as valid, reliable, and objective as the state of the art permits. Finally, the reader of a given research report should be told what is known about the validity and reliability of the measurement techniques employed.

The first point here needs little elaboration. If one is attempting to assess the truth value of a hypothesis dealing with methods of teaching music, he would not accept scores on a test of Morse code as a logical criterion. The other points seem just as clear. And, if it were not for some empirical evidence to the contrary, the authors would make no further comment. In a study of the agreement among ten judges' ratings of research reports, questions regarding the validity and reliability failed to discriminate between good and poor research.[9]

The failure to select or develop reliable, valid and objective measuring devices again strikes at one's conclusion. If one cannot attest to the degree to which he is really and consistently measuring what one said he was going to measure, or if the recorded measurement means so many things to different persons he CAN NOT have faith in a cause-and-effect conclusion. One knows not the effect. The same concern exists when the goal is a descriptive or historical study. Unless one is sure that those bits of information that were recorded are valid indicators of reality, he cannot describe or trace.

Advice on assessing the quality of research or in designing a specific project seems painfully apparent from the above comments. But, the failure of persons with recognized competence to use instrument validity and reliability to discriminate between good and poor research makes the writer's risk being pedantic in the following statements. Every piece of research should include a concern about instrument validity and reliability. Researchers should either select measuring devices that have established validity and reliability for the use in the specific study or incorporate into the project activities that assess these characteristics.

A model encompassing the three factors described above -- units, treatments, and measurements -- can be graphically displayed as shown in Figure 8. It is believed that this model not only assists individuals in conceptualizing about the quality of generated data but also in gaining insights about the contribution various research methodologies make to our body of knowledge. For example, in a descriptive study one seldom, if ever, has any control over treatments experienced. He can exert extreme control over unit selection and measurement. Thus a methodologically perfect descriptive study could be located at point D on the vertical face of the left of the cube. Any specific descriptive study may be less than perfect on either of these two dimensions and thus be located somewhere on that face of the cube.

Campbell and Stanley have proposed a methodology they call the quasi-experiment.[10] This methodology is designed for those instances in which definite restrictions on sample selection are found. Control is possible in this case on the factors of treatment and measurement thus locating the methodologically perfect quasi-experiment at the Q-E notation on the bottom face of the cube. Again a specific Q-E design with weaknesses in either measurement of treatment control is located on this bottom face of the cube.

In historical studies the researcher lacks control over any of the factors. He does, however, attempt to carefully establish the population, the sample, the validity and reliability of his data, and the nature of the treatments. To the extent that he accomplishes these he moves away from the O point up into the cube.

Finally, experimental research is characterized by controls over all three factors. Thus the perfect experiment is located at point E and those of lesser quality back somewhere within the cube, dependent upon the nature of the specific flaws.

The analysis of the data generated in a given study is to some degree specified by the three factors discussed above. That is, statistical computations are based upon assumptions about the representativeness of the sample, the type and number of treatments employed, and the scalor nature of the numbers obtained. As the space is too limited in this discussion to deal adequately with these assumptions and the resultant prescriptions for data analysis, such a discussion is omitted here. This omission should in no manner

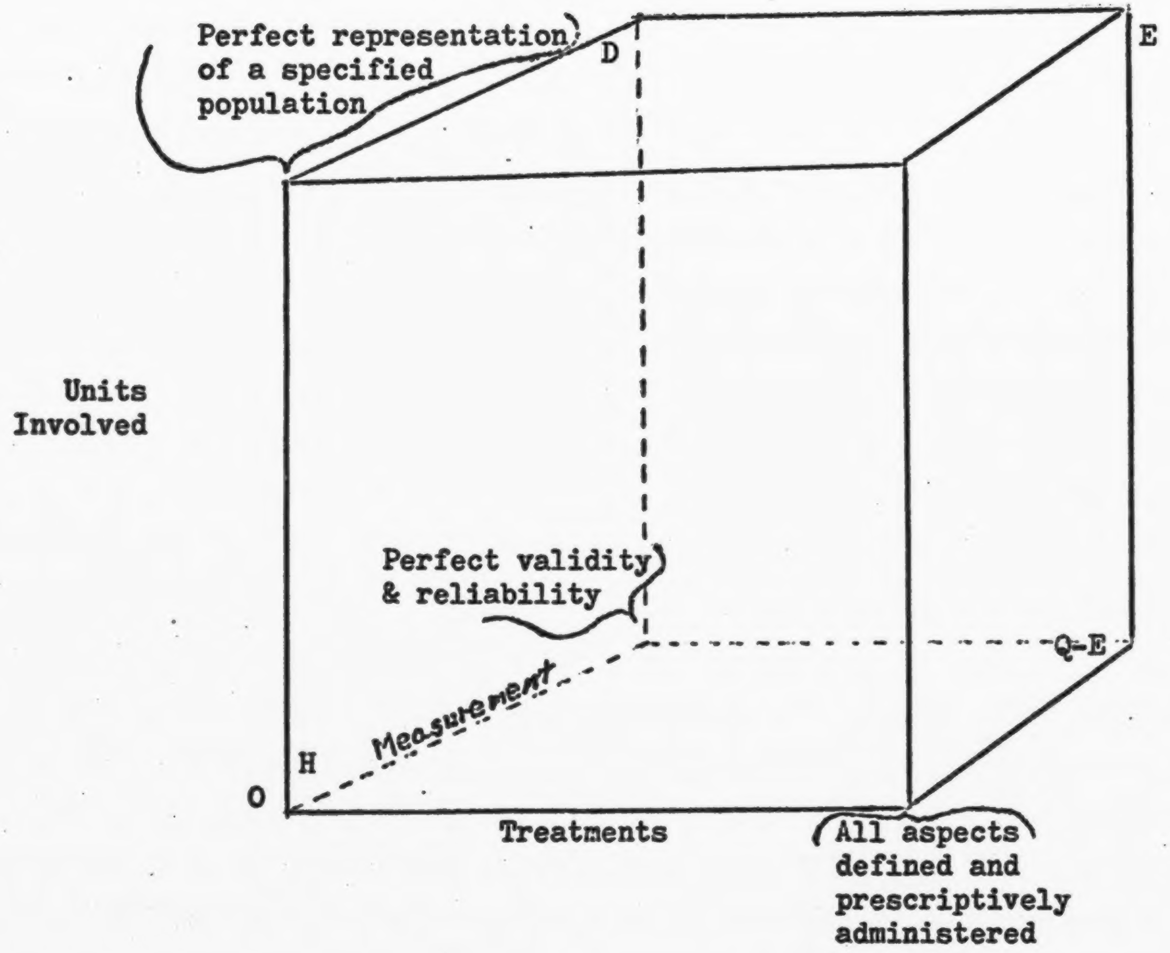

Perfect representation of a specified population
D
E
Units Involved
Perfect validity & reliability
Q-E
Measurement
H
O
Treatments
All aspects defined and prescriptively administered

Fig. 8.--A three-dimensional paradigm for conceptualizing the methodological adequacy of the data generation in a given research project.

be inferred to reduce their importance in either the conduct of a research project or in evaluating completed research. It is urged that if the nature of these assumptions is not patently clear, a competent statistician should be consulted either in designing and conducting a study or in analytically critiquing completed reports. The point that cannot be emphasized too heavily here is see him (the statistician) early!

Some Thoughts on Proposal Writing

Several persons have analyzed proposals to funding agencies and come up with a variety of suggestions. One of the best of these is an article by Smith[11] based upon his study of proposals submitted to the Cooperative Research Program of the U. S. Office of Education. The following statements are based on Smith's statements plus the experiences of one of the authors as a proposal evaluator for the Office of Education.

People who read and evaluate proposals state that two factors are crucial. Does the proposal communicate? Does the proposal convince? Although in fact these two factors are inseparable, we separate them here for discussion.

A proposal can fail to communicate in two ways. The first has to do with engendering interest in the evaluator's mind. The second deals with the details of the proposed program. In advising professors of educational administration, Guba states:

> It is crucial in preparing a proposal to place yourself in the role of the person who is going to have to read it. Your proposal is likely to be considered along with many others. The person who reads it may be tired, harassed, irritable; more importantly, he probably is not an expert in your content area, although he might be quite sophisticated in general. It is important under these circumstances that your statement be in clear, distinct language which catches the reader's attention from the outset and lets him know in precise and simple terms just what you propose to do. If you fail to communicate with the reader in those first crucial paragraphs, his first hasty impression of inadequacy is also likely to be his final decision.[12]

This aspect of a proposal can readily be checked through consultation with one's peers. Ask your colleagues to read your proposal. Then question them about what it says, to what extent it interested them, and where it should be revised. Two institutions known to the authors do this regularly. In both cases an internal review committee is set up involving persons with a variety of specialities. The ground rules are such that the review panel is invited to be as blunt as possible and the proposer is denied the opportunity of emitting defensive statements. He can ask for clarification of a criticism but not offer an explanation of what he meant. If the discussion comes to a point that he (the proposer) feels the need to give oral explanations, he has a pretty fair indication of the type of needed written additions or revisions.

The reactions of others can also be helpful in assessing the degree to which the project as proposed is convincing. Here again two points seem paramount. First, is it an important problem to deal with? Saying that it is an important problem is probably the least effective approach. Present the facts or data that establish the existence of a problem followed by two items: (1) a discussion of what is known about the variables structuring the problem area, and (2) the antecedents of the problem, namely, those things in society, the profession, and in our technology that lead to a concern for this problem. This type of presentation shouts importance ever so much more effectively than the words "it is important."

The second aspect of a proposal's convincingness deals with the objectives and procedures of the project. Again, placing one's self in the reviewer's position is helpful. With the existence of a problem as a base, one ought almost to be able to predict the objectives of the project. The statement of procedures to be employed should be directly relevant to the objectives and should not have gaps. Do not assume that the reader will insert procedures. The omission of them he perceives as being an indication of the investigator's level of expertise. Our earlier comments about PERT and critical path methods are relevant here.

In closing this presentation it is believed important to reiterate some of Smith's points despite their elementary nature. First, the proposal writing chore will be much easier if one knows how the approval process works. Call or write the agency for such information in advance. It should provide information regarding the specific limits of the agency, proposal format, deadline dates, the review process, and the criteria upon which the review is based.

Second, read and follow the instructions. Failure to do so at best delays consideration of the project and at worst may lead to its rejection.

Third, use consultants where needed. No reviewer today will interpret the use of consultants as a weakness on the part of the proposer. BUT, when consultants are named, be sure that a commitment has been obtained. It is startling to see the degree to which some of our educational leaders are named in projects and even more startling when one asks these persons about their involvement! A list of consultants is never adequate. In the procedures section of the proposal one should indicate how he plans to use the consultants.

Finally, never take on the task of writing a proposal when two conditions exist: (1) there is no belief in the project; and (2) it had to be done last Friday. The phoniness engendered needs no further discussion. The difficulties of the lack of planning time are twofold: (1) it is difficult to write about a project that has not been thoroughly thought through; (2) one omits crucial aspects. He is unsure in specifying what might or should be done to solve the problem on which he is focusing. As frustrating as these points are, the second difficulty is worse. One might get the grant. Then what does he do?

Here one is reminded of the Nebish cartoons that a couple of years ago graced the ashtrays on novelty stands. My favorites are a sequence of two showing two men at a long table. In the first, the men are tilted back with their feet on the table. The caption says, "Next week we've gotta' get organized." The second has the same table, same men, but this time they lean forward, elbows on the table in an anticipatory pose. Now the caption reads, "Now that we're organized, what are we gonna' do?"

References

1. The "if clause" of a hypothetical statement is referred to as the antecedent and the "then clause" as the consequent.

2. Where p and q stand for categorical statements.

3. Alexander, Peter. *Preface to the Logic of Science*. London: Sheed and Ward, 1963.

4. Polya, G. "Patterns of Plausible Inference," *Mathematics and Plausible Reasoning*, Vol.II. Princeton, New Jersey: Princeton University Press, 1954.

5. Cook, Desmond L. "Impact of the Hawthorne Effect on Experimental Designs in Educational Research," U. S. Office of Education Cooperative Research Project Number 1757, The Ohio State University, 1967.

6. Orne, Martin. "On the Social Psychology of the Psychological Experiment: With Particular Reference to Demand Characteristics and their Implications," *American Psychologist*, 17: 11 (November, 1962), 776-83.

7. Campbell, Donald T.,and Julian C. Stanley. "Experimental and Quasi-Experimental Designs for Research on Teaching." In N. L. Gage (ed.), *Handbook of Research on Teaching*. Chicago: Rand McNally and Company, 1963, pp. 176-246.

8. Cook, Desmond L. "Program Evaluation and Review Techniques (PERT): Applications in Education," U. S. Office of Education Cooperative Research Monograph Number 17. Washington, D. C.: U. S. Government Printing Office, 1966.

9. Gephart, William J. "Thoughts on Identifying 'Significant' Research Problems in Music Education." Conference paper; *Vide* Part III of this report.

10. Campbell and Stanley, *op. cit*.

11. Smith, Gerald R. "How to Write a Project Proposal," *Nation's Schools*, 76 (August, 1965), 33-5+.

12. Guba, Egon G. "The Writing of Proposals." In Stephen P. Hencley (ed.), "Research in Educational Administration," U. S. Office of Education Cooperative Research Project Number F-2, University Council for Educational Administration, Columbus, Ohio, 1962, pp. 168-9.

STATUS OF PROGRAMS FOR MUSIC EDUCATION RESEARCH IN GRADUATE EDUCATION

The Conference Staff
The Ohio State University

Preface

The status report to the Conference concerning programs for research was presented in tabular and quasi-tabular form with oral commentary. The objective was to provide the Conference with an understanding of current programs which teach and encourage research on the part of students and faculty in graduate Music Education. The important aspects of the tables were emphasized so that these would enter into the deliberations of the Conference. It was recognized that the meaning of the results was related to the respondents' understanding of the term 'music education'. It is evident from a number of the tables that the definition used by some of the respondents was not one limited to the education of professional music teachers for elementary and secondary schools or the activities of the educators of those teachers. This definitional confusion itself is an interesting commentary on the state of music in higher education.

A questionnaire was sent to all institutions known to have and believed to have graduate programs in Music Education. This included 271 institutions. Of these, 182 responded with 144 stating that they had a graduate program in Music Education and 38 reporting that they had no graduate program. The statistics in this report are based on the replies of the 144 institutions.

The format of this report follows the sequence of the categories of questions included in the questionnaire sent to respondents. A copy of the questionnaire is appended to the tables which follow.

Responses to the Questionnaire

Administration

1. Question: In what kind of an administrative organization does graduate music education function in your institution?
(Responses are listed as recorded by respondees.)

Department of Music in a:	
University	2
Land Grant University, College of Professional Schools	1
State Supported University	1
Graduate School	2
Graduate School as approved by College of Education	1
Graduate School of a University	1
College of Arts and Sciences	5
College of Letters and Sciences and Graduate School	1
College of Humanities and Arts	1
Division of Arts and Letters in Liberal Arts College	1
Liberal Arts College	17
Liberal Arts College of a State University	1
School of Humanities in a State University	1
School of Liberal Arts and Sciences in a State University	1
State College	3
State College, Division of Graduate Music	1
College of Education	1
School of Education in a University	1
Teachers College	1
Teacher Training and Liberal Arts College	2
College of Fine Arts	3
College of Fine and Applied Arts	1
College of Creative Arts	1
College of Fine Arts in a University	1
College of Music in a University	1
School of Fine Arts	1
School of Fine Arts in a University	1
School of Fine Arts in a Liberal Arts College	1
School of Fine and Applied Arts	1
School of Fine and Applied Arts in a Liberal Arts College	1
School of Music, School of Graduate Studies	1
School of Music in a University	2
Conservatory	2
Conservatory of Music	1
Conservatory of Music, Division of Liberal Arts College	1
Division of Fine Arts	1
Division of Fine Arts with Division of Graduate Studies	1
Division of Fine Arts in a Liberal Arts College	1
Division of Fine Arts of a College, Division of Graduate Studies	1
Division of Music, Creative Arts Center, with Graduate School	1
Division of Music in School of Fine and Applied Arts	1
Division of Music in College of Fine and Applied Arts in a University	1
Department of Music	1
Department of Music and Music Education in School of Fine Arts and Graduate School	1
Department of Music Education in the Division of Creative Arts	1
Department of Graduate Music Education within Division of Music and Education	1
Department in School of Music and School of Education	1
Department in School of Music of University	2
Department of School of Music	2
Department of College of Music in Graduate Division of University	1
Department of Education	1
Department of Fine Arts Education in College of Education	1
Department in School of Fine Arts	1

Division of Music in College	1
Division of Music and Art in School of Education in Land Grant University	1
Division of Music in Graduate School	1
Division of Music governed by Graduate School	1
Division of Music Education in:	
College of Fine Arts in a University	1
School of Music in Graduate College of University	1
School of Music in College of Education	1
School of Education	1
Department of Music, Department of Graduate School of Arts and Sciences	1
Department of Music, School of Fine Arts, Graduate School of University	1
Division of Fine Arts	1
Division of Fine and Applied Arts	1
Division of the Graduate School	2
Division of Curriculum and Instruction in School of Education in Cooperation with Department of Music, College of Arts and Sciences	1
School of Music in:	
University	4
College of Fine Arts	3
College of Liberal Arts	3
College of Letters and Sciences and Department of Curriculum and Instruction in School of Education	1
College of Liberal Arts in joint effort with College of Education	1
Graduate Division	1
A Liberal Arts University	1
Department of Music Education	1
Graduate School of Arts and Sciences	1
University Graduate College	1
Graduate College and a College of Fine Arts	1
School of Music and School of Education	2
School of Music and Graduate School	1
School of Music	3
School of Graduate Studies	2
School of Education	2
Graduate School:	
Division	4
School, Music Education Department, College of Education	1
School of Education and Faculty of Arts and Sciences	1
Department in School of Music	1
Division of School of Music	1
Music Education Department	1
College of Music and other Performing Arts in a University	1
College of Music, Department of Music Education	1
College of Education and Division of Music in Division of College of Arts and Sciences	1
Committee on Graduate Studies, Division of Music Education, in a Department of Music in a School of Fine Arts in a College of Arts and Sciences	1
Fine Arts Department of College of Arts and Sciences	1
Area of Music Education in School of Music within a College of Fine Arts	1
Independent Conservatory	1
Science	1

2. Question: To what administrative unit is the graduate music education subunit responsible for the following?

Faculty Load Assignments

School of Music	15
School of Music and School of Education	2
School of Music and College of Education	1
School of Music in College of Letters and Science	1
School of Humanities	1
School of Education	4
School of Education and Conservatory of Music	1
Director	2
Director, School of Music	2
Director and Associate Director of School of Music	1
Director, Division of Humanities and Social Sciences	1
Director and Academic Vice President of College	1
Director of Graduate Extension and Summer Studies	1
Head, Music Department	7
Head, Music Department, and Dean of Arts and Sciences	1
Head, Division of Fine Arts	1
Head, Music Education; Dean, College of Education; President	1
Head, Music Department, and Summer School Director	1
Chairman, Music Department	13
Chairman, Music Education	2
Chairman of Division	1
Chairman with approval of Dean	1
Chairman	1
Department of Music	21
Department of Music and Graduate Studies	1
Department of Music and the College of Letters and Sciences	1
Department of Music and Music Education	1
Department of Music and Dean of College of Education	1
Department of Music Education	2
Department Chairman and Division of Graduate Studies	1
Dean of School of Music	7
Dean of Graduate School	6
Dean of Fine Arts and Head, Music Department	3
Dean, College of Music	2
Dean of College of Fine Arts and Dean of Graduate Division	1
Dean of Fine Arts	1
Dean of College of Arts and Sciences	1
Dean of College of Creative Arts	1
Dean of Creative Arts Center	1
Dean of Fine and Applied Arts with Head of Division of Music	1
Dean and Chairman of Music Department	1
Dean of the University	2
Dean of the College of Education	1
Dean	2
Assistant Dean	1
Division of Music	4
Division of Music and College of Education	1
Division of Fine Arts	1
Division of Fine and Applied Arts upon Request of Music Department	1
Division of Arts and Letters	1
Division of Humanities	1
Division of Graduate Studies and School of Music	1
College of Music	2
College of Arts and Sciences	1
College of Fine and Professional Arts	1
Graduate School of Education	1
Graduate School and Academic Vice President	1

Music	1
Music and Fine Arts Department	1
President	1
University Policy	1
Not applicable	1
No answer	2

Hiring of Faculty

School of Music	15
School of Music and School of Education	3
School of Music and Academic Vice President	1
School of Music and College of Education	1
School of Music in College of Letters and Sciences and Department of Curriculum and Instruction in School of Education	1
School of Education	2
School of Education with concurrence of Department of Music	1
School of Humanities	1
School of Fine Arts	1
Director and Associate Director and Ad Hoc Committee Members	1
Director and Academic Vice President of College	1
Director, Division of Creative Arts; Dean of Faculty; President	1
Director	1
Director, School of Music	1
Director, School of Music, and Dean, College of Fine Arts	1
Chairman	2
Chairman, Music Department	6
Chairman, Music Department; Chairman, Music Education; Department Advisory Committee	1
Chairman, Music; President; Commissioner of Education	1
Chairman, Music; Recommendation to Dean, School of Arts and Sciences	1
Chairman, Department; School Council; Dean of School of Music, Dean of Faculty	1
Chairman, Department of Music Education	1
Chairman of Division	1
Chairman, Division of Subject Matter with approval of Dean and President	1
Department of Music	17
Department of Music and College	1
Department of Music and College of Fine Arts	1
Department of Music and College of Letters and Sciences	1
Department of Music; Graduate School, Provost	1
Department Appointments Committee	1
College of Music	2
College of Education	1
College of Arts and Sciences	1
College of Fine and Professional Arts	1
College of Arts and Sciences with Recommendation by School of Music	1
Music	1
Music and Fine Arts Department	1
Dean	3
Dean, School of Music	5
Dean, School of Music and Chairman, Music Department	1
Dean, School of Music and Vice President of University	1
Dean, College of Music	1
Dean, College of Music with Department Head	1
Dean of Fine Arts; Head, Music Department	2
Dean, College of Fine Arts; Dean, Graduate Division	1
Dean, College of Creative Arts	1
Dean, College of Education	1
Dean of Education	1
Dean of Fine Arts	2
Dean, Graduate School of Education	1
Dean, Graduate School	2
Dean, Creative Arts	1

Dean of Faculty and Chairman of Department	1
Dean and Chairman of Music Department	1
Dean, Arts and Sciences; Dean, Graduate School	1
Dean, Arts and Sciences, Dean, Graduate Division	1
Dean, Teachers College	1
Dean and President	1
Dean, Academic Affairs and President	1
Head, Music Department	5
Head, Music Department; President	1
Head, Music Department; Director, Summer School	1
Head, Music Department, Dean, Arts and Sciences	1
Head, Music Department; Chairman, Secondary Education	1
Head, Division of Music; President	1
Head of Department; Dean, Graduate Studies	1
Head, Music Education; Dean, College of Education; President	1
Division of Music	4
Division of Music and College of Education	1
Division of Arts and Letters	1
Division of Humanities	1
Division of Fine and Applied Arts	1
Division of Graduate Studies and Dean of School of Music	1
Graduate School of Education	1
Conservatory of Music in agreement with School of Education	1
President	3
President, with recommendations of Music Faculty	1
President, with recommendation of Music Faculty and Division of Fine Arts	1 1
Rank of Associate or above with President's approval	1
Vice President for Instructional Affairs	1
Not a subunit	1
No answer	5

Obtaining Instructional Materials

School of Music	19
School of Music (except for professional education courses)	1
School of Music Office	1
School of Music, College of Education	1
Schools of Music and Education	1
School of Education	2
School of Humanities	1
Department of Music	23
Department of Music and the College of Letters and Science	1
Department of Music Education	1
Department and Library	1
Department Director reports to Academic Vice President of the College	1
Department Chairman following budget approval by Dean and President	1
Dean of School of Music	8
Dean of College of Music	1
Dean of Arts and Sciences	1
Dean of Graduate School	1
Dean of Fine Arts	2
Dean, College of Education	1
Dean, Division of Fine Arts who also serves as Head, Music Department	1
Dean, Creative Arts Center	1
Dean of Education	1
Head of Music Department	5
Head of Music Department, Library	1
Head of Department	1
Head of Music Department and Chairman Secondary Education	1
Head of Division of Music	1

Chairman of Music Department	9
Chairman of Department, Business Manager of the School, consultation with the Director	1
Chairman, Department of Music Education	1
Chairman	1
Chairman of the Department	3
Chairman, Division of Fine Arts	1
Chairman of Music Education and Chairman of Music Department	1
Division of Music	5
Division of Fine Arts	1
Division of Music and College of Education	1
Division of Fine and Applied Arts	1
Director, School of Music	2
Director of Music Education	1
College of Music	2
College of Education	1
College of Arts and Sciences	3
College of Fine and Professional Arts	1
Music	1
Music Education Chairman	1
Music Education Department, College of Education	1
Music Education, Department of Fine Arts, General Library Budget, Educational Media Department for Visual Aids, etc.	1
Music Office (Chairman)	1
Music Department which is in Division of Fine Arts and Communications in College of Arts and Sciences	1
Graduate School of Education	1
Graduate School Dean	1
Graduate Music Education Department	1
Summer School Director and Head of Music Department	1
Department Heads	1
Conservatory of Music	1
Business Manager	2
Faculty of Department	1
Fine Arts Department	1
Within the Department of Music	1
Recommendations made to the Dean	1
State Purchase Department	1
Teachers	1
Each instructor is personally responsible	1
The Coordinator of Graduate Music wrote most of the materials used	1
Largely Division Head	1
No answer	4
Not a subunit	1
Not applicable	1

Intern Supervision

No answer	37
None	23
Department of Music	12
Department of Music and School of Education	1
Department of Music and College of Letters and Sciences	1
Department of Music and Department of Education	1
Department of Music Education	1
Department of Music Education (Therapy only)	1
Department of Music and Music Education	1
Department of Curriculum and Instruction, School of Education	1
School of Music	18
School of Education	5
School of Humanities	1
College of Music	1
College of Arts and Sciences	1
College of Education	1
College of Fine and Professional Arts	1
College of Teacher Education	1
Division of Music	2
Division of Fine and Applied Arts	1
Division of Fine Arts and Division of Education	1
Chairman	1
Chairman of Department of Music	6
Chairman of Department of Music Education	2
Chairman of Department of Music and Chairman of Department of Education	1
Chairman of Division of Fine Arts	1
Dean	1
Dean of School of Music	3
Dean of College of Education	1
Head of Music Department	2
Head of Education Department	1
Director of Music Education	1
Director and Academic Vice President of College	1
Deputy Chairman in Charge of Graduate Programs	1
Graduate School of Education	1
Music	1
State Department of Education	1
Music Education Faculty through College of Education	1
Teachers College of University	1
Not a subunit	1
Not applicable	2
Undergraduate levels - seniors	1
Graduate Assistants work to assist undergraduate division	1

3. Question: What is the title of the chief graduate music education administrator?

Chairman of Department of Music	18
Chairman of Department of Music and Music Education	1
Chairman of Department of Music Education	9
Chairman of Music Education	2
Chairman of Music Education and Church Music	1
Chairman of Music Education Division	1
Chairman of Department of Music and Graduate School	1
Chairman of Division of Music	2
Chairman of School of Music	1
Chairman of Department of Education	1
Chairman of Graduate Division in School of Music	1
Chairman of Department of Graduate Studies in Music	1
Chairman of Graduate Music Studies	7
Chairman of Graduate Studies and Chairman of Music Education Department	1
Chairman of Fine and Applied Arts	1
Chairman of Department of Fine Arts Education	1
Chairman	4
Head of Department of Music	18
Head of Department of Music and Chairman of Graduate Committee	1
Head of Division of Music	1
Head of Music Education	1
Head of Music Education Division	2
Head of Music Education Activity	1
Head of Music Education Department	1
Head of Graduate Music Education	1
Head of Fine Arts Department	1
Head of Division of Fine Arts	1
Head	1
Director	4
Director of School of Music	5
Director of Music Education Programs	2
Director of Music Education and Director of Graduate Studies in Music	1
Director of Music Graduate Studies	1
Director of Graduate Studies	2
Dean of School of Music	1
Dean of College of Music	1
Dean of Graduate School	1
Dean	1
Assistant Dean	1
Associate Dean of School of Music and Chairman of Music Education	1
Associate Dean	1
Coordinator	1
Coordinator of Music Education	2
Coordinator of Graduate Studies in Music Education	1
Coordinator of Graduate Music	1
Advisor	3
Advisor in M.A.T. Program	1
Graduate Advisor	1
Graduate Coordinator	2
Administrator - Department of Music Education	1
Deputy Chairman in Charge of Graduate Program	1
Professor of Music Education	1
Field Supervisor of Student Training	1
No title	10
No title (no administrator)	1
No assignment	1
None	7
"No distinction between music and music education." (No title)	1
No answer	4

Degree Programs

1. Question: What programs are offered toward a graduate degree in music education at your institution?

TABLE I

KIND AND NUMBER OF MASTER DEGREES AND CERTIFICATES
OFFERED IN MUSIC EDUCATION

Degrees	N	%
Master of Arts	56	26.66
Master of Music	47	22.38
Master of Music Education	35	16.66
Master of Education	23	10.95
Master of Science in Education	12	5.71
Master of Arts in Teaching	9	4.28
Master of Science in Music Education	6	2.85
Master of Science	2	.95
Master of Arts in Education	2	.95
Master of Education in Music Education	2	.95
Master of Arts in Music Education	2	.95
Master of Arts (minor in music)	2	.95
Master of Science in Teaching	1	.47
Master of Fine Arts in Music Education	1	.47
Master of Science in Applied Science	1	.47
Master of Science in Music Education	1	.47
Master of Education (music minor)	1	.47
Master of Fine Arts	1	.47
Specialist in Education in Music Education	1	.47
Certification Program	1	.47
Master of Teaching Arts	1	.47
Educational Specialist	1	.47
Master of Teaching	1	.47
Total	210*	

* Total number of institutions reporting = 144.

TABLE II

KIND AND NUMBER OF DOCTORAL DEGREES OFFERED IN MUSIC EDUCATION

Degrees	N
Doctor of Education	25
Doctor of Philosophy	21
Doctor of Musical Arts	10
Doctor of Music	1
Doctor of Music Education	1
Total	58*

* Total number of institutions reporting = 144.

TABLE III

MULTIPLE DEGREES IN MUSIC EDUCATION OFFERED BY INSTITUTIONS

Number of Degrees	N
Three degrees	3
Two degrees	11
One degree	27
Total	41

TABLE IV

DEGREE PROGRAM CURRICULAR BALANCE*

Degree		Balance By Course Areas			
		Music	Mus. Ed.	Non-Music	Total
Master of Arts	Range	0 - 36	0 - 24	0 - 24	
	Mean	17	7	6	30
Master of Music	Range	10 - 30	0 - 18	0 - 10	
	Mean	19	8	3	30
Master of Music Education	Range	0 - 30	0 - 18	0 - 16	
	Mean	14	11	7	32
Master of Education	Range	0 - 28	0 - 22	0 - 23	
	Mean	12	10	13	35
Master of Science Education	Range	0 - 18	5 - 18	6 - 20	
	Mean	9	11	11	31
Master of Arts in Teaching	Range	8 - 20	6 - 18	6 - 23	
	Mean	12	10	11	33
Master of Science in Music Education	Range	7 - 30	0 - 16	2 - 17	
	Mean	17	9	8	34
Doctor of Education	Range	0 - 37	8 - 45	0 - 62	
	Mean	24	21	27	72**
Doctor of Philosophy	Range	0 - 60	9 - 40	0 - 20	
	Mean	24	22	11	57**
Doctor of Musical Arts	Range	12 - 70	0 - 40	0 - 18	
	Mean	26	19	9	54**
Doctor of Music		60 - 68	0	12	72 - 80**
Doctor of Music Education		54 - 78	12	24	90 - 114**

* In Semester hours

** Inclusion of dissertation hours not specified.

Courses of Study

1. Question: Which of the following subject areas are graduate students urged or required to take?

TABLE V

MASTER DEGREE NON-MUSIC AND MUSIC-RELATED COURSES

Courses	Required		Urged		Total*	
	N	%	N	%	N	%
Statistics	9	6.25	23	15.97	32	22.22
Research Techniques	89	61.81	24	16.66	113	77.91
Psychology of Music	27	18.75	35	24.30	62	43.05
Sociology of Music	5	3.47	17	11.80	22	15.27
Advanced Psychology of Learning	23	15.97	41	28.47	64	44.44
Sociology of Education	16	11.11	23	15.97	39	27.08
Drama & Fine Arts (No Music)	3	2.08	23	15.97	26	18.05
Aesthetics	13	9.02	32	22.22	45	31.25
Acoustics	12	8.33	23	15.95	35	24.30

* Total respondents = 144

TABLE VI

DOCTORAL DEGREE NON-MUSIC AND MUSIC-RELATED COURSES

Courses	Required		Urged		Total*	
	N	%	N	%	N	%
Statistics	21	51.21	13	31.70	34	82.92
Research Techniques	31	75.60	8	19.51	39	95.12
Psychology of Music	16	39.02	14	34.14	30	73.17
Sociology of Music	5	12.19	7	17.07	12	29.26
Advanced Psychology of Learning	18	43.90	13	31.70	31	75.60
Sociology of Education	7	17.07	11	26.82	18	43.90
Drama & Fine Arts (No Music	2	4.87	12	29.26	14	34.14
Aesthetics	11	26.82	18	43.90	29	70.73
Acoustics	6	14.63	9	21.95	15	36.58

* Based on 41 respondents who offer a doctoral degree.

2. Question: Is the student required to apply behavioral science research techniques to a small problem in music education prior to writing the master's thesis or doctoral dissertation?

TABLE VII

PRE-THESIS BEHAVIORAL SCIENTIFIC RESEARCH EXPERIENCE

Response	N	%
Yes	45	31.25
No	84	58.33
No Answer	15	10.41
Totals	144	99.99

3. Question: Do you have a functioning program specifically designed to train researchers in music education?

TABLE VIII

PROGRAMS FOR TRAINING RESEARCHERS

Response	N	%
Yes	29	20.13
No	107	74.30
No Answer	8	5.55
Totals	144	99.98

4. Question: If you do not have such a program, are you definitely planning for such a program to be instituted in the near future (one - three years)?

TABLE IX

FUTURE PROGRAMS FOR TRAINING RESEARCHERS PLANNED

Response	N	%
Yes	31	21.52
No	70	48.61
No Answer	43	29.86
Totals	144	99.99

Faculty Research

1. Question: By what method is research by the music education faculty encouraged

TABLE X

METHODS OF ENCOURAGEMENT FOR FACULTY RESEARCH

Response	N	%
A. Percentage of Load	40	27.77
B. Extra Contract	11	7.63
C. None	49	34.02
Combinations of the above:		
A, B	14	9.72
A, C	1	.69
No Answer	29	20.13
Totals	144	99.96

2. Question: Are promotions related to the research of a graduate faculty member?

TABLE XI

RELATIONSHIP BETWEEN RESEARCH AND FACULTY PROMOTIONS

Response	N	%
A. No	34	23.61
B. Seldom	18	12.50
C. Sometimes	51	35.41
D. Often	20	13.88
E. Requirement	10	6.94
Combinations of the above:		
A, B	1	.69
C, D	1	.69
No Answer	9	6.25
Totals	144	99.97

3. Question: Are there inservice programs for faculty in research methodology?

TABLE XII

INSERVICE RESEARCH EDUCATION FOR FACULTY

Response	N	%
A. No	92	63.88
B. Special Music Department Program	2	1.38
C. Can take Courses in other Departments	17	11.80
D. Encouraged to take Courses in other Departments	2	1.38
Combinations of the above:		
A, C, D	1	.69
A, C, E	1	.69
A, B	1	.69
A, C	10	6.94
A, D	2	1.38
B, C, D	1	.69
B, C	1	.69
C, D	5	3.47
No Answer	9	6.25
Totals	144	99.93

4. Question: Are published reports of research given greater weight toward faculty advancement than other types of publication?

TABLE XIII

PUBLICATION REQUIREMENTS AND FACULTY ADVANCEMENT

Response	N	%
No	92	63.88
Yes	31	21.52
No Answer	21	14.58
Totals	144	99.98

5. Question: Faculty qualifications for guiding graduate student research in music education?

TABLE XIV

FACULTY QUALIFICATIONS FOR GUIDING GRADUATE STUDENT RESEARCH

Response	N	%
A. Post-doctorate research	1	.69
B. Doctoral Dissertations	20	13.88
C. Research Publications	0	
D. Publications in General	00	
E. Apprenticeship in Guiding Theses and Dissertations	13	9.02
Combinations of the above:		
A, B, C, D, E	9	6.25
A, B, C, D	12	8.33
A, B, C, E	1	.69
A, B, C	2	1.38
A, B, D	4	2.77
A, B, E	2	1.38
A, B	2	1.38
A, D	1	.69
A, E	1	.69
B, C, D, E	6	4.16
B, C, D	8	5.55
B, C, E	1	.69
B, D, E	6	4.16
B, C	4	2.77
B, D	11	7.63
B, E	8	5.55
C, D, E	3	2.08
C, D	3	2.08
C, E	1	.69
No Answer	25	17.36
Totals	144	99.87

Appendix

The following documents were used to obtain the data for the preceding report. These include:

1. Cover letter
2. Questionnaire

THE OHIO STATE UNIVERSITY
SCHOOL OF MUSIC
1899 NORTH COLLEGE ROAD
COLUMBUS, OHIO 43210

LEE RIGSBY, *Director*

November 1, 1966

FROM: Henry L. Cady, Director
Conference on Research in Music Education

RE: Graduate Programs in Music Education

The United States Office of Education is sponsoring a Conference on Research in Music Education to be held at The Ohio State University in the week of February 26 - March 4, 1967.

One aspect of research in Music Education which will be of concern to the Conference is the training of researchers in Music Education. The enclosed questionnaire is a means for obtaining information about this problem and its related activities in graduate education.

The data obtained from this questionnaire will be grouped and not connected in any way with a specific institution. In the event that there should be merit in identifying programs of specific institutions, the prior approval of the institutions will be requested.

Please return the questionnaire at your earliest convenience. The quality of this conference will be directly dependent on the aid you can give this office. Your cooperation is appreciated.

HLC/swb

CONFERENCE ON RESEARCH IN MUSIC EDUCATION
Music Education Research Office
The Ohio State University

Name of Institution: ______________________________

Address: ______________________________

Name of Chief Administrator in Music: ______________________________

Address: ______________________________

The following questionnaire seeks information about graduate programs in music education and research in music education.

I. ADMINISTRATION

1. In what kind of an administrative organization does graduate music education function in your institution? (Please give complete titles of units)

   Examples: 1) Division of Music Education in a College of Fine Arts in a University.
   2) Department of Music in a Liberal Arts College.

   Organization: ______________________________

   ____

   ____

2. To what administrative unit is the graduate music education subunit responsible for the following:

   Faculty Load Assignments: ______________________________

   ____

   Hiring of Faculty: ______________________________

   ____

   Obtaining Instructional Materials: ______________________________

   ____

   Intern Supervision (if any): ______________________________

   ____

3. What is the title of the chief graduate music education administrator?

   Title (Not Professorial Rank): ______________________________

   ____

II. DEGREE PROGRAMS

What programs are offered toward a graduate degree in music education at your institution?

Degree	Curricular Balance in Semester Hours		
	Music	Music Education	Non-Music
Example: M.M.	30	10	5
M.A.			
M.A.T.			
M. Mus.			
M. Educ.			
M. Mus. Educ.			
M. Sc. Educ.			
Other			

* * * *

Ph. D.			
Ed. D.			
D.M.A.			
Other			

Comments: ______________________________

____

____

III. COURSES OF STUDY

1. Which of the following subject areas are graduate students urged or required to take? (Check)

Course	Master's Level		Doctoral Level	
	Urged	Required	Urged	Required
Statistics				
Research Techniques and Design				
Psychology of Music				
Sociology of Music				
Advanced Psychology of Learning				
Sociology of Education				
Drama & Fine Arts (No Music)				
Aesthetics				
Acoustics				

2. Is the student required to apply behavioral science research techniques to a small problem in music education prior to writing the master's thesis of doctoral dissertation? YES _____ NO _____

Comments: ______________________________

____

3. Do you have a functioning program specifically designed to train researchers in music education? YES _____ NO _____

Comments: ______________________________

____

4. If you do not have such a program, are you definitely planning for such a program to be instituted in the near future (one - three years) ? YES _____ NO _____

Comments: ______________________________

____

IV. FACULTY RESEARCH

1. By what method is research by the music education faculty encouraged? (Check)

   Percentage of Load ______
   Extra Contracts ______
   None ______
   Other (explain): ______________________________

2. Are promotions related to the research of a graduate faculty member? (Check)

   No ______
   Seldom ______
   Sometimes ______
   Often ______
   Requirement ______
   Comment: ______________________________

3. Are there inservice programs for faculty in research methodology? (Check)

   No ______
   Special Music Department Program ______
   Can take Courses in other Departments ______
   Encourage to take Courses in other Departments ______
   Other (explain): ______________________________

4. Are published reports of research given greater weight toward faculty advancement than other types of publication? (Check)

   No ______
   Yes ______
   Comment: ______________________________

5. Faculty qualifications for guiding graduate student research in music education? (Check)

   Post-doctorate research ______
   Doctoral Dissertations ______
   Research Publications ______
   Publications in General ______
   Apprenticeship in Guiding Thesis and Dissertations ______
   Other (explain): ______________________________

THE TRAINING OF EDUCATIONAL RESEARCHERS

John E. Hopkins
Indiana University

When one seeks outside assistance, he frequently comes away more befuddled than he was before. Generally, this results from the outsider's assurance that the problem is much more complicated than you had imagined it to be. Then he proceeds to tell you the ways in which it is more complicated. I am afraid I must do just that. There is no simple formula for the training of educational researchers. In the next twenty-five minutes I will try to illustrate the dimensions of the complexities involved. However, I will also try to shed some light on the elements which are usually combined to create formal programs of preparation for education researchers. Therefore, you should be somewhat farther down the road after this presentation than you were before it. First, you will appreciate even more the diverse nature of the graduates which a training program should produce. Second, you will have before you, and can use as you wish, the essential elements of training programs which are usually added or subtracted in varying proportions to secure the types of training programs desired.

Types of Researcher Roles

Educational Research Roles. First, let me muddy the waters by illustrating the essential point that there can be no single type of formal training program in music education because there is not, and will not be, a single type of music education researcher. The training will have to be modified (1) to produce various types of researchers and (2) to fit the personal needs of the individual trainees.

This became clear to David L. Clark, Blaine R. Worthen, and me in 1965 as we worked on this campus to project the likely demand for educational research and research-related persons.[1] We saw that whatever data we would gather for that project would have to be discretely categorized if it were to retain its meaning. Fortunately we had access to the 5,000 personal data questionnaires sent to Robert Bargar[2] by persons who identified themselves with the educational research community. By analyzing these questionnaires, we were able to develop the rather comprehensive listings identified as Table I among the pages handed to you today. The three columns on Table I (institutional settings, for example) were selected by us as being most appropriate for the purposes of our study. It is recognized that there were other dimensions which might have been used. Another obvious one, for instance, was the substantive specialization of the persons being categorized. But the dimensions given here were the ones finally chosen as having the greatest utility for our task.

The comprehensive listings which appear on Table I were then related to each other to form the "Logical Structure for Viewing Research, Development, and Diffusion Roles in Education" which appears as Chart I among your pages. By placing persons within this structure according to the three dimensions of importance to us, we were able to group persons (1) working in similar settings, (2) with similar professional assignments, and (3) performing similar functions in the process of research and development in education.

As intended, we were thereby able to "pigeon hole" the variety of research and research-related persons we encountered. But the structure can also be used in reverse fashion, i.e., to generate rather comprehensive listings of the range of research and research-related roles generally found in education.

Let me illustrate the point. Within the institutional setting labeled "Colleges and Universities" will be found persons with different professional assignments working toward different objectives. At The Ohio State University, there is Robert Taylor directing the Center for Vocational and Technical Education. There is also Karl Openshaw who recently completed a final report for the teacher characteristics project he directed. Dr. Taylor is responsible for directing a large and relatively complex organization which has a continuing programmatic thrust in its particular field. Dr. Openshaw's project on the other hand, was of smaller size, short-term in nature, and was devoted to a rather discrete piece of research.

To these differences in administrative responsibility must be added differences in objectives. The one seeks to use knowledge to improve instruction; the other sought to add new knowledge in order to solve an operational problem in education.

Perhaps a single, all-purpose training program can encompass this much diversity. I do not think so. I believe this demonstrates the need for a number of basic starting points in the formal training program, with each branching out to encompass a number of the multiple combinations of knowledge, skills, and experiences needed by persons who must occupy the diverse roles already in existence.

Music Education Researcher Roles. With different dimensions, the structure on Chart I should provide a similar generative capacity for music education research. The utility I see in creating music-related dimensions is that a short time spent in sorting out the products of such dimensions would illustrate fully the variety of roles for which persons must be prepared. You would find it unnecessary to go to the point of generating highly unique or obscure roles before encountering a generous number of dissimilar ones. It should expand the parameters of your thinking as you consider the development of formal preparation programs for music education researchers.

Thus, you would be able to generate the obviously disparate; e.g., the university-based learning theorist and his applications of learning theory to the pedagogy of music education, on the one hand, as compared with the school-based diagnostian and his analysis of student progress in relation to various pedagogical techniques, on the other. More importantly, the multiple roles which fall between the stereotypes will begin to be clarified. With this clarification, it will be more difficult to overlook them. And any move away from the stereotyped roles will be a highly productive venture for music education researchers.

TABLE I

THREE DIMENSIONS FOR CATEGORIZING RESEARCH, DEVELOPMENT, AND DIFFUSION PERSONNEL IN EDUCATION

Institutional Settings

1. Colleges and Universities
   - a) Schools and Colleges of Education
   - b) Behavioral and Social Science Departments
   - c) Other Disciplines and Cognate Fields
   - d) University Administration and Affiliated Organizations
   - e) R & D Centers (USOE-sponsored)
   - f) University Affiliated Centers and Institutes
2. Federal Agencies
   - a) U.S. Office of Education
   - b) Federal Social Service and Welfare Agencies
   - c) Military
   - d) Other Federal Agencies
3. State Agencies
   - a) Departments of Public Instruction
   - b) State and Local Social Service and Welfare Agencies
   - c) Other Related State Agencies
4. Schools and School Systems
   - a) Local Public Elementary and Secondary Schools
   - b) County Systems and Intermediate Units
   - c) Private Schools
   - d) Parochial Schools
5. Private Research Institutes, Agencies and Practice
   - a) Private Research Institutes
   - b) Private Social Service and Welfare Agencies
   - c) Private Individual Research
6. Professional Associations
   - a) Professional Education Associations
   - b) Related Professional Associations
   - c) Related Public and Lay Associations
7. Inter-Agency Organizations
   - a) Regional Educational Laboratories
   - b) Other Federally Sponsored Agencies
   - c) Independent Membership Agencies
   - d) University Sponsored Agencies
8. Accrediting Associations
9. Private Foundations
10. International Education Agencies
11. Business and Industrial Concerns

Functional Emphases in Professional Assignment

1. Program Directors and Staff
   - a) Directors of Funded Research Programs
   - b) Directors of Intra-Organization Research Bureaus or Institutes
   - c) Directors of Operations Research Programs
   - d) Directors of Research Training Programs
   - e) Staff of Funded Research Programs
   - f) Staff of Intra-Organization Research Bureaus or Institutes
   - g) Staff of Operations Research Programs
   - h) Staff of Research Training Programs
2. Project Directors and Staff
   - a) Directors of Research Projects
   - b) Directors of Operations Research Projects
   - c) Staff of Research Projects
   - d) Staff of Operations Research Projects
3. Individual R, D, and D Personnel
4. Stimulators and Coordinators of R, D, and D Activities
5. Technical Consultative Personnel
   - a) Substantive Specialists
   - b) Methodological Specialists
   - c) Technological Specialists

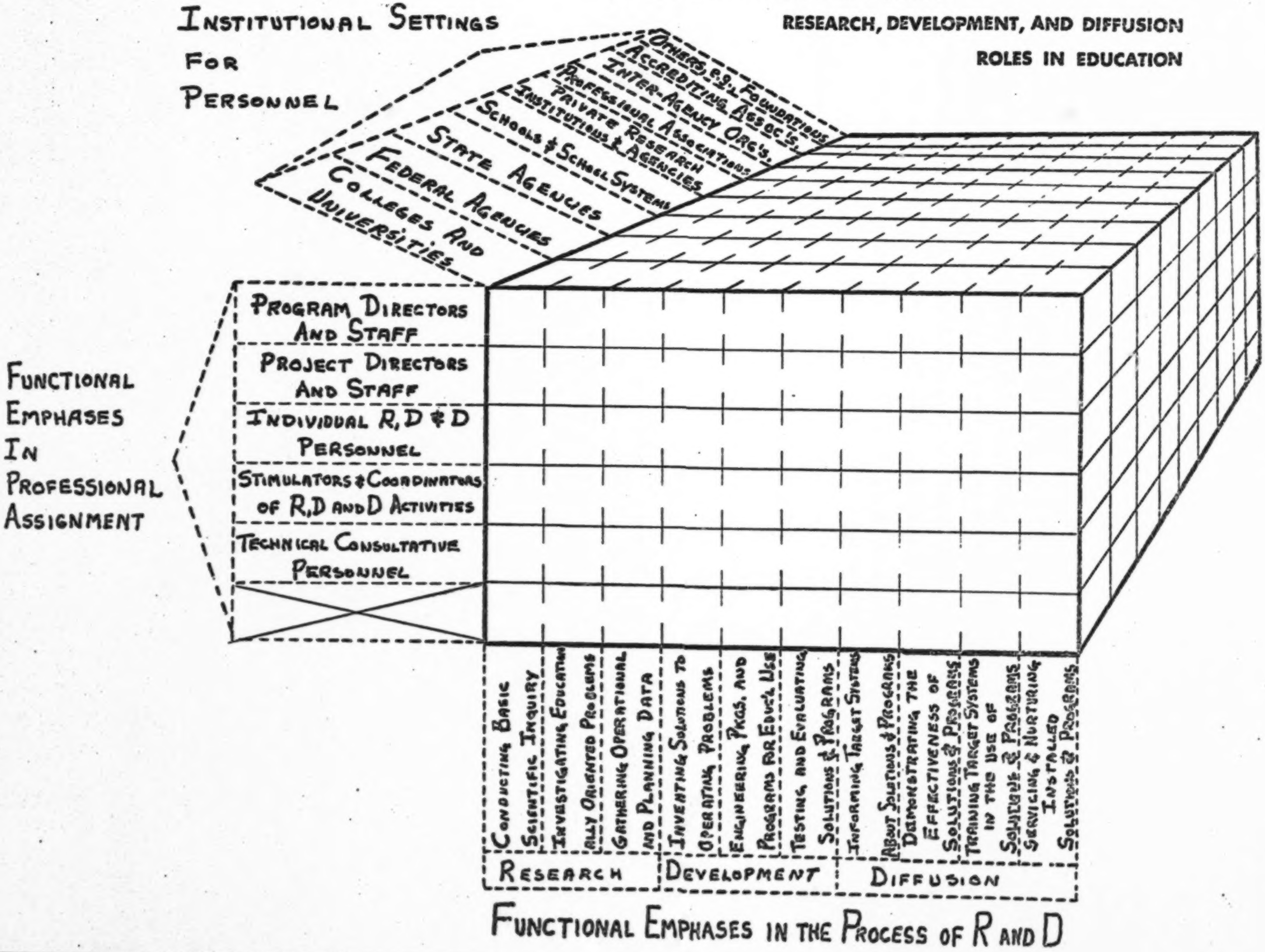
Functional Emphases in Relation to the Change Process in Education

1. Conducting Basic Scientific Inquiry
2. Investigating Educationally Oriented Problems
3. Gathering Operational and Planning Data
4. Inventing Solutions to Operating Problems
5. Engineering Packages and Programs for Educational Use
6. Testing and Evaluating Solutions and Programs
7. Informing Target Systems About Solutions and Programs
8. Demonstrating The Effectiveness of Solutions and Programs
9. Training Target Systems in the Use of Solutions and Programs
10. Servicing and Nurturing Installed Solutions and Programs

C Clark, D.L., and John E. Hopkins. "Preliminary Estimates of Research, Development, and Diffusion Personnel Required in Education, 1971-72," Special Project Memorandum, Bloomington, Indiana, September, 1966.

CHART I

A LOGICAL STRUCTURE FOR VIEWING
RESEARCH, DEVELOPMENT, AND DIFFUSION
ROLES IN EDUCATION


INSTITUTIONAL SETTINGS FOR PERSONNEL
OTHERS, e.g., FOUNDATIONS
ACCREDITING ASSOC'S.
INTER-AGENCY ORG'S.
PROFESSIONAL ASSOCIATIONS
PRIVATE RESEARCH INSTITUTIONS & AGENCIES
SCHOOLS & SCHOOL SYSTEMS
STATE AGENCIES
FEDERAL AGENCIES
COLLEGES AND UNIVERSITIES
FUNCTIONAL EMPHASES IN PROFESSIONAL ASSIGNMENT
PROGRAM DIRECTORS AND STAFF
PROJECT DIRECTORS AND STAFF
INDIVIDUAL R, D & D PERSONNEL
STIMULATORS & COORDINATORS OF R, D AND D ACTIVITIES
TECHNICAL CONSULTATIVE PERSONNEL
CONDUCTING BASIC SCIENTIFIC INQUIRY
INVESTIGATING EDUCATIONALLY ORIENTED PROBLEMS
GATHERING OPERATIONAL AND PLANNING DATA
INVENTING SOLUTIONS TO OPERATING PROBLEMS
ENGINEERING PKGS. AND PROGRAMS FOR EDUC'L USE
TESTING, AND EVALUATING SOLUTIONS & PROGRAMS
INFORMING TARGET SYSTEMS ABOUT SOLUTIONS & PROGRAMS
DEMONSTRATING THE EFFECTIVENESS OF SOLUTIONS & PROGRAMS
TRAINING TARGET SYSTEMS IN THE USE OF SOLUTIONS & PROGRAMS
SERVICING & NURTURING INSTALLED SOLUTIONS & PROGRAMS
RESEARCH
DEVELOPMENT
DIFFUSION
FUNCTIONAL EMPHASES IN THE PROCESS OF R AND D

Some members of the educational research community are now casting about for newer roles which will give greater meaning to their efforts, but confidence in the traditional roles appears to be so strong among educational researchers that the search has received only token support from the status figures in the community. It may be hoped that you will be able to avoid this same situation by maintaining a broader perspective from the very beginning.

Educational Programs for Researchers

Adapting the Program for the Individual

Lest it be overlooked, let me mention the obvious. In addition to the many modifications in program which will be required by the diverse roles to be filled by its graduates, still other modifications will be necessary because of the nature of the students themselves. A number of recent studies have consistently reported that creative researchers are relatively non-concerned with rules, authority, and regulations. They are quite independent and require freedom of choice on course selection and other program components. Conformity in these matters was found to be detrimental to the very creativity which was being nurtured.

Elements of Training Programs for Educational Researchers

When the need to make the trainee program sufficiently flexible to produce a variety of graduates is considered beside the need to give students this freedom of choice on course selection and other program components, it may appear that sequences of courses should not be developed and cast in a recommended order of progression. To some extent that is true. But it is also true that freely chosen courses and experiences will be of limited value unless they are supported by an adequate understanding of the concepts and methods of research. If some prerequisite experience is not suggested when it is called for, the benefit of the students' research experiences will necessarily be reduced. We shall proceed, then, to consider a formal program of training and look at the elements of such a program. However, keep firmly in mind that the degree of participation in this formal program should desirably change from one individual to another.

Before proceeding further, I must first acknowledge the sources of my information. Most of the data which follow have been developed by others, especially David Krathwohl,[3] Sam Sieber,[4] Guy Buswell,[5] and Robert Bargar.[6] It is only through the very excellent recent work of these persons that I am able to report much of the detail which follows.

From this point we will first look at the formal courses and training experiences offered research trainees. Because they form the bulk of research training programs, these elements will be presented and discussed in modest detail. Thereafter, other elements which contribute to the quality and effectiveness of training programs will be enumerated, but will not be discussed to any extent.

Coursework.--David Krathwohl has published a generally accepted description of the formal coursework used for the training of educational researchers and teachers of educational research. I shall give you the common coursework in these preparation patterns because it is likely that they will have to be a resource, at least, in whatever kind of training program you finally decide upon. And here I am quoting Dr. Krathwohl.

> The (coursework) core consists of research methods courses, a fairly heavy emphasis on statistics at a sophisticated level (including factor and multivariate analysis), experimental design, and a solid program in educational and psychological measurement and scaling. Courses in philosophy of science, research methods (e.g., questionnaire construction, sampling), computer coding, basic mathematics (e.g., matrix algebra) appear in a large number of programs. Most programs require enough education courses such as history and philosophy of education, curriculum, educational psychology, and sometimes administration and counseling that the student can at least talk with his professional colleagues.

Not every one of these experiences would be required of all students, but it does appear that the large majority of them would have to be frequently offered so as to be available to those who need them -- at the time they need them.

To these core programs are added a variety of special features. Some institutions also offer a philosophy of science course (to give perspective); college teaching methods courses; consultant experiences; special courses with visiting staff (between quarters, for example); summer training programs; courses at the undergraduate level; and others.

Most institutions (91%) offer a single introductory general methods course in educational research. Only four of the 104 institutions in Krathwohl's study failed to provide statistics. But the average number of statistics courses offered in education was only 2-1/5 courses, with most offering only two. Measurement courses are more frequent; an average of three courses in measurement was found per institution. About one-third included measurement among their requisites.

Sieber found that an average of 9.5 courses in research are offered in the 110 institutions included in his study. He points out, however, that these courses were generally scattered throughout several departments and were, therefore, specialized by field of concentration. Thus, a student's opportunity to study research methods was much more restricted than might be suggested by his average 9.5 courses per institution figure.[8]

We may conclude that the budding educational researcher is likely to have a minimal opportunity to learn the tools of his trade, but apparently not much more than what may be obtained through formal coursework. In his excellent study on educational research, Sieber concluded that this may not be as discouraging as it appears on the surface. He found the availability of research courses in schools of education to be unrelated to the production of researchers.[9] Even after surveying possible coursework opportunities outside of the schools of education, he was still able to conclude that opportunities for coursework on research do not seem to promote the adoption of research as a career.

Experience.--Let us turn, then, to the research experiences which are provided to see what part they play in the preparation of educational researchers. In general, it may be said that graduate students receive no research experience above that of the dissertation experience. Yet most writers about research training indicate that the doing of research is probably the most important means of learning its methods and adopting proper attitudes.[10] Possibly the best known summary in this regard is that which appears in the 1959 APA report on research training:

> Everything we have found points to the fact that coursework, formal examination requirements, and anything else that could be standardized concerns what is ancillary to research training. What is the essence is getting the student into a research environment and having him do research with the criticism, advice, and encouragement of others who suffer the same pain and enjoy the same rewards....Research is learned by doing and taught mainly by contagion.[11]

Guba enumerates a number of possible patterns of clinical experience.[12] Some of these are:

1) The collaborator pattern. Students are attached to professors and collaborate with them on more or less exciting research problems.

2) The participant training pattern, which attaches students to ongoing projects where they participate to the extent of their abilities. The students are also permitted to carve out an interest area of their own.

3) The consortium pattern. Where consortiums of institutions relate to a specific project, each institution supports a graduate student of ability on the staff. This opens the possibility of exchange of students among institutions for special experiences.

4) The training team pattern, which brings researchers together with a variety of experts and consultants to pool their knowledge for the solution of a problem.

5) The research institute pattern. Students are associated with entire programs of research (as contrasted with a single research project) so that they can be rotated from one type of experience to another, as and when such seems necessary.

Guba states that obviously no single university would want to attempt all of these patterns, but would instead choose among them as its particular circumstances and resources dictated. I would recommend, instead, that all of them be kept in the armory for possible use. Not only is it likely that the needs of individual students would require the use of each one of these patterns over a period of time, but the refusal to relegate any of the patterns to the discard pile will keep the more often-used patterns from becoming institutionalized.

Coursework AND Experience.--We have seen that coursework is necessary as an efficient means of providing numbers of students with basic concepts about research methodology even though opportunities for coursework are not related to the production of career researchers. We have also seen that involvement in research experiences is widely regarded as one of the most critical elements of a research training program, but that actual provision of such experiences is quite rare. In fact, it is the combination of these elements (and others which we shall look at next) which seems to account for the production of active researchers. No single type of learning experience is adequate. The production of active researchers appears to be directly related to the extent to which the institution is able to amalgamate training elements of a high calibre and make them freely available to their graduate trainees at the time they are needed.

Student Selection.--The following conclusions appear well established with regard to the selection of trainees: (1) researchers decide to pursue graduate work earlier than non-researchers, (2) productive researchers spend less time in teaching than non-productive researchers or non-researchers, (3) researchers who receive their degree by age 32 are more productive than those who obtain it at age 40 or above, and (4) researchers are more likely to have taken their undergraduate work in institutions which offer the doctorate.

There are obvious implications in these conclusions for the early recruitment of research trainees and for the elimination of experience requirements which defer pursuit of the necessary research training.

Continuous Study.--Full-time and summer-resident study have been found to be positively related to later research productivity. Frequently interrupted part-time and evening study (which is the way educationists generally get their degrees) is negatively related to research production. Further, the longer a person remains in the doctoral study program, the less involved he will likely become in research activities.

Parallel Ph.D. and Ed.D. Programs.--Where the two programs are offered in a single institution, both appear to suffer. The Ph.D. standards tend to become more similar to the Ed.D. standards. The Ed.D. candidates, on the other hand, appear to believe that their training in research is inferior to that of the Ph.D. candidates and they therefore tend to shy away from research involvement. Sieber made the very interesting finding, however, that the research training of the Ph.D. candidates was only slightly better than that of the Ed.D. candidates.[13] Their feelings of inferiority were largely unfounded.

In case there is anyone still interested in the relation of Ph.D. and Ed.D. candidates vis-a-vis research activity, it is quite clear that Ph.D. graduates are more likely to engage in productive research activity.

Financial Assistance.--The availability of some form of financial support ranks high among the factors which influence the most capable students in their selection of an institution. Where this support takes the form of research assistantships, internships, or apprenticeships (rather than teaching fellowships or assistantships), the result has been the production of more active researchers.

Interdisciplinary Program.--The evidence is inconclusive on the extent to which the taking of courses outside the school of education, or with other than professors of education, influences the production of researchers or subsequent research activity. In some high prestige schools, where professors have joint appointments, there does seem to be some benefit, but the caliber of the students at these institutions is such that this factor alone could account for the differences discovered. Others have found a negligible or no relationship between the two.

Research Climate.--An institutional climate which is favorable to research is very important for the development of researchers. The components of such an "institutional climate" include (1) active faculty pursuit of research, (2) administrative arrangements for facilitating research activity, and (3) readily available advising and consultation services. Obviously the trainees not only benefit from having visible models of research productivity, but they also enjoy a warmer reception for their research proclivities and greater opportunities to become involved in an actual research project where members of the faculty are generally engaged in research.

With regard to administrative arrangements for facilitating research, Sieber reports that research units provide enormous opportunities for research training.[14] At present, unfortunately, these are not being exploited. Nevertheless, where administrative structures such as research bureaus do exist, there are greater opportunities for research experience than where all such experiences must be gained from scattered, independent research projects.

The opportunity to secure readily available advice on problems of research design is a third factor in "research climate" which has been highly ranked as a facilitating factor in research training, as has the opportunity simply to talk with others about their own research.

Recruitment.--There is no direct evidence of a relationship between any single recruitment practice and the production of researcher, but the five highest producers of doctorates in general have all reported extensive recruitment activities. It seems clear that where there are more applications for entrance there can be greater selectivity -- and selectivity is definitely related to researcher production.

Summary

As a summary, let me quote Guy Buswell. He recommended that universities

> ...free the student from an excessive preoccupation with the mechanics of doctoral study by (1) establishing a minimum of course requirements, (2) providing opportunities for early immersion in research, (3) encouraging a maximum of independent study, and (4) providing a research environment in which the student is free to experiment with new ideas and methods and to interact with scholars in education and related fields.[15]

Mr. Buswell is a knowledgeable and perceptive gentleman. I recommend his prescription to you.

References

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THE DISSEMINATION OF EDUCATIONAL PRACTICE

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Let me exclude the dissemination of research findings from our discussion with some words of explanation. Research-based knowledge can be disseminated in at least three forms: it can be transmitted, it can be translated, or it can be transformed. Let us consider each.

1) Research-based knowledge can be transmitted in its original language to an audience which can read that language and benefit from the information in the report. Presumably the audience for the original research report is quite small. I suspect it consists of 1) that limited group who could have conducted the research study themselves -- that is, those who can fully understand it, and 2) that limited group so situated and so skilled that they can apply the research results in developing new forms of practice.

2) Research-based knowledge can be translated into the proper languages for a wide variety of audiences. That is, the reports can be rewritten -- perhaps in condensed or expanded form -- with the needs and background of a particular audience in mind. Among the possible specialized audiences, two worth special mention are those who are developing new forms of practice and those who will actually practice the new behaviors once they are developed.

3) Research-based knowledge can be transformed into useful practice. To be more exact, the knowledge can be used to guide the creation, the invention, the design, even the engineering of new ways to do things. Translate research findings into the language of designers and they will transform those findings into useful practice.

Few of those who practice a behavior have either the talent or the time to study that behavior scientifically or to design new behaviors based on scientific knowledge -- nor should they be expected to do so. It is enough that they behave skillfully. Thus the thing to be disseminated to practitioners is not research-based knowledge but rather new forms of practice which they can adopt or adapt.

Thus, on the assumption that our interest at this point in the Conference is how to employ research findings so as to change the way music teachers teach, I would like to discuss not the dissemination of raw research findings, which I assume most music teachers cannot use, but the dissemination of transformed research findings -- that is, new ways of teaching -- which I assume most music teachers can use. I will not discuss, then, the dissemination of research, but instead the dissemination of teaching practice based on that research.

You note that I am repeating the same point over and over. The reason for this is that two widely-held beliefs -- which you perhaps share -- stand in direct opposition to what I am proposing. Each belief leads to a dissemination strategy entirely different from the one I am proposing in this paper. You ought to consider those alternative strategies during your Conference. The first belief is that the distance between researcher and teacher is short and could be eliminated entirely by bringing the two face to face. That belief leads to proposals that researchers should take interest in practical classroom problems, and that teachers should learn to respect the contributions of researchers, and that each should learn the language of the other. The second belief is that the researcher-teacher gap is wide but may be eliminated by having teachers act as their own researchers. That belief leads to proposals for action research. Neither of these beliefs has much to support it in the way of theory or observed practice.

On the other hand, there is much experience in education, in medicine, in agriculture, and in industry to support the proposition that the gap between researchers and practitioners is large, that both groups tend to act more and more like themselves rather than more like each other, and that the gap can be filled best by having men stand between researchers and practitioners to put the product of the researchers into a form usable by the practitioners. These men are usually called "developers." They are the inventors and the engineers. In our profession we know them as curriculum developers, textbook writers, film makers, teaching machine designers, and so on. Again, what we are going to discuss is the dissemination of developments -- that is, music education curricula, materials, and teaching techniques. These developments, we trust, will be based on dependable knowledge generated through research.

We could stop here and say a great deal about the complex process of development It could be pointed out that basic research into human learning as well as basic research into the actual nature of knowledge in the field of music ought certainly to precede any development effort. It could be pointed out that the development of instructional materials ought to be an iterative process during which each component of those materials is designed and written, then tested with pupils, with the results fed back to the writers, who then rewrite and retest the material, with the whole process being repeated until that particular component is good enough to go into the package of materials. Then the package ought to be tested as a whole, probably on a small scale in pilot locations, and be modified again if necessary. A full-scale discussion of the development process would explain, incidentally, that this testing of pilot designs is a highly significant form of research, often called "applied research." And further discussion would explain that following small-scale testing for the purpose of redesign should come large-scale testing for the purpose of determining what the package (now completed and fixed into final form) will do in assorted field settings when placed in the hands of garden-variety teachers. This field testing is undertaken not for the purpose of improving the developed materials, but rather to determine what kind of teachers can use it to teach what to what kind of pupils. The results are not sent back to the designers at the drawing boards, but rather on to the disseminators to let them know where to send the materials and on out to the prospective adopters in the field to let them know whether to adopt the materials. Thus you can see that if we examined the process of development, it would become clear that dissemination begins where development ends -- with the form of research called field testing. Now we can discuss the dissemination of educational practice, knowing that what is to be disseminated is not research results, but the research-based practice which grows out of development efforts.

Probably there is no better way to think about dissemination than to start with the obverse of dissemination, which is adoption. Dissemination is sending; adoption is receiving. The new music programs we disseminate must be adopted by someone else. By examining carefully the problems faced by the prospective adopter, we can draw implications for dissemination techniques. This is roughly tantamount to becoming a good salesman by studying the customer's problems.

1) An identifiable innovation

> The new program must be in a form which is identifiable, describable, and reproducible. An instructional innovation must be adopted as a body of practice. There may be profound principles or a great guiding spirit behind it, but unless it is reduced to behaviors which the adopter can learn, it cannot be successfully imported. Moreover, it must be in such form that those using the behaviors will almost assuredly produce the desired product as a consequence. That is, the efficacy of the program must not be attributable to some mysterious quality lent to it by an esoteric group of developers. Adopters must of course become acquainted with the principles and spirit underlying the innovation so that they will not use it mechanically, but even intimate knowledge of the rationale is no substitute for an identifiable body of practices with which to carry it out.

Implications: Perhaps the greatest problem in completing a development is to cut the umbilical cord between the developer and the development. You may be familiar, as I am, with programs which are unable to travel on their own -- programs which require the continued participation of the developers, at least in teaching the program to other teachers.

Until the developers have put the program in such a form that it can be used without their personal participation, it can never be disseminated beyond the audience which they can reach personally. Such an audience will always be quite limited.

Before dissemination, it should be determined that those who use the program faithfully will achieve the same results as those who developed it originally. The chief purpose of field testing, described earlier, is to produce exactly that assurance.

2) Public acceptance

> Public enthusiasm for the specific innovation is not necessary. (A particular innovation may not even have high visibility to outsiders.) However, while public neutrality is harmless, public opposition would in all likelihood devastate the innovation. Thus opposition must be prevented even if enthusiasm is not aroused.

> The public must be informed about a change so that it will not come as a surprise and arouse opposition for that reason alone. The customary channels of information such as newspaper reports, letters from the school, and PTA meetings can carry the limited information needed to prevent opposition to most innovations. A major change, however, may require the use of public meetings and special citizens' committees to help explain it.

Implications: Ideally, program developers will supply the local school system with information necessary to explain the impending change to the public. This information will be most useful if it is brief and written in a language that could be quoted in local news releases. The reasons for developing the new program ought to be explained, its basic ingredients ought to be described, evidence about its success ought to be offered, any extra costs ought to be indicated, and the names of other schools using the program ought to be mentioned. This will answer most of the questions the public has about the innovation.

3) Strong administrative endorsement

> If any principle is well-established, it is that a positive desire for the changeover -- not merely a neutral acceptance -- must be displayed by the administrative staff. The ideal stance for the administrative staff is that the change must be accomplished but that all the resources at its command will be applied assiduously to easing the way for the change.

Implications: To disseminate a new type of instructional program, it is essential to convince the school administrator of its value. He need not be the original source of interest in a new type of program and he need not be convinced first. But unless he gives the program his attention and actively promotes its use, its chances of coming to life in local classrooms are slim.

Local music teachers, who may hear about the new program long before their principals and superintendents, can often arouse administrative interest in the new development. They should be encouraged to do so. Whether or not this method works, those in charge of disseminating the program must remember that the administrator is ultimately the key member of their audience, especially if the innovation cannot be accomplished by a teacher working alone within the confines of his own classroom, but is a larger program which demands new behavior from many teachers.

The administrator needs the kinds of information suggested above for the public; he also needs a somewhat deeper knowledge of the rationale, procedures, and results of the program. He will be especially interested in knowing more about the schools in which it has been used successfully because he needs to know whether it has worked in a setting which matches his in teacher qualifications, class size, and availability of equipment and materials.

Like other staff members, the administrator can have his interest aroused by published material and conference speeches, but like them too he is not likely to become persuaded by these techniques. For that, he will want to visit the program and observe it in operation -- preferably in a setting much like the one from which he comes.

4) Balanced attention to the novel and to the familiar

> Probably the most delicate balance to be struck in the introduction of an innovation is that between pointing out its familiar elements and pointing out its distinctive ones. Familiarity with the ingredients of a new program paves the way for acceptance by assuring teachers that they can handle the innovation partly with existing skills. And yet if it is made to seem almost identical to what they are already using, there is no reason to change. Or if they do change, they may adopt only the familiar elements and ignore the very ones which make the innovation superior.

Implications: The best tactic for the disseminators is probably to delineate sharply certain elements which the innovation shares with traditional programs, and to delineate equally sharply the novel elements. Both must be done if the program is to look both feasible because of its similarity and yet worthwhile because of its novelty. These twin themes should be developed in material used to describe the program and should be included in speeches and in demonstrations.

5) Convergence of outside reference group norms

> Staff members belong to professional associations outside the local school system and to other outside groups which can grant them status and prestige. In addition they look for approval to outside agencies which are in a position to judge their work, such as the schools which will receive their students subsequently or the employers who will hire them. Many teachers respond strongly to the values of such outside groups and agencies -- especially the more innovative staff members, who tend to be externally-oriented. If the innovation calls for behavior which the staff member thinks unacceptable to the outside group, even if ardently endorsed by his own school, he will resist the innovation.

Implications: Favorable opinions of the innovation by outside professional leaders, endorsement by colleges or other schools which graduates will attend, or use of the innovation by highly-regarded school systems should be called to the attention of prospective local users. If the developers themselves are people of good reputation, that fact will of course be reassuring.

The much-lamented "bandwagon phenomenon" does of course exist and it does affect the behavior of many school systems. Some schools will not join the parade until the bandwagon has pulled along side or even passed down the street. Research studies of diffusion in other fields show that there are some individuals and institutions who are true pioneers. They like to break ground; they want to get there first. At the same time, those diffusion studies show that the pioneers are a small minority indeed. They show that most people feel safer as followers.

Since all the evidence points to the same thing being true in education, disseminators will want to tell schools that the recommended innovation has been used successfully elsewhere.

6) Early staff awareness and interest

> Diffusion studies in other fields suggest that practitioners go through a series of steps in adopting a new program. In a typical series, they become aware of it, they develop an interest in it; they decide to try it; they use it on a limited scale; and they adopt it for full-scale use. While it is unlikely that these steps are followed by every school adopting every program, we can recognize from our own experience the difference between being aware something exists, deciding to give it a try, and making it permanent.
>
> The school presumably needs different information as it goes through each step.

Implications: Disseminators should be able to supply information to fit each stage of a prospective adopter's decision-making process.

Simple awareness of the innovation can be established by printed material and by speeches at meetings. A favorable impression can be developed by showing how the innovation is in keeping with traditional values, is convergent with values of outside reference groups, is a somewhat familiar form of practice, and is feasible within the resources of the typical school.

To convert awareness into actual interest, disseminators must show that the innovation is addressed to an area of learning in which the local school itself has located an unacceptable gap. At this point, a kind of "artificial visit" is desirable. Longer printed or filmed descriptions can be used for the "visit." However, the ideal form is one which makes further inquiry easy. Correspondence is helpful but conversations are better. Speakers and consultants (preferably those who have produced or used the innovation) should be made available if possible. Once on the local scene, they will be more effective in small, informal, semi-social sessions than on a platform, thus allowing teachers and administrators to question them closely and at length.

Since it is at about this point that the local staff will want to examine the actual instructional materials, disseminators should have them available for inspection.

7) The decision to try the innovation

> Once the practitioner knows what the innovation is, he has arrived at the point where he can consider whether to use it. The two chief questions in his mind at that stage are likely to be: "Is it designed for a setting like my own?" and "Can I make it work?"
>
> It seems to be established that the best way to answer such questions is to have prospective adopters visit a site where the innovation is in actual use. Certain conditions are necessary if the visit is to be fully effective:
>
> a) There must be a minimum of artificiality and showmanship in the program being demonstrated.
>
> b) Ideally the demonstration setting should be recognizable to the visitors as quite similar to the schools from which they come.
>
> c) There should be no special features of the program which the visitors will regard as essential to success but as unreproducible at home. The presence of extraordinary teachers,

> elaborate equipment, abnormally high contact with university personnel and other expensive or unmanageable features will tend to convince visitors that the program is not for them.
>
> d) It should be possible for visitors to talk to teachers and students as well as to sponsors of the program so that they can get the perceptions of those who must live with the program from day to day.

Implications: The implications from all of this should be rather clear. The chief point to remember is that the demonstration of a new program should not be conducted in highly artificial settings, such as those in which the program itself may have originated. For example, if a new kindergarten music curriculum is developed with the aid of a generous government grant in five suburban school systems which enjoy extraordinary faculties, unusual physical facilities, and a rich supply of instructional materials -- those are not the locations in which the program should be displayed to prospective adopters. It ought to be moved out into ordinary schools before visitors are invited to see it.

8) Testing program amended

> Among the methods used to judge teaching success, pupil achievement test results rank high with the public, administrators and teachers themselves. Innovations which would reduce pupil scores on highly-regarded tests and thereby discredit not only the innovation but the teachers employing it will arouse understandable resistance. Thus, schools must have tests which match the innovation. Frequently, such tests can only be produced by those who developed the new program because only they understand fully its intent and purposes. Getting schools to substitute new tests for the old ones not only removes a barrier, it also introduces a compelling reason to make the innovation work.
>
> Tests administered by external agencies exert more influence on the schools than tests made locally. It is especially important that these tests accommodate the proposed innovation.

Implications: Test development ought to be a natural part of program development. Tests which can be used by schools may be a natural by-product of the testing done by the developers as they try out the program and redesign it during the development stage as well as of the testing they do in large-scale field trails.

In addition to constructing tests which can be used by the school in conjunction with the innovation, the group developing the new program should approach the major producers of standardized tests and seek to have their instruments modified to reflect the new content. The viewpoint of a professional association can be more influencial on testing agencies than the viewpoint of a curriculum project staff acting in isolation. This is simply because testing agencies need to feel that a large block of professional opinion favors the inclusion of the new content.

9) Prohibitive regulations removed

> Schools are regulated by the state (and some federal) agencies which support and control them. In addition, individual school buildings and school teachers are governed by local rules, especially in a large school system. Regulations which might prevent adoption of an innovation must be amended, suspended, or otherwise set aside.
>
> In addition to the actual regulations, a subtle process is at work which can be more troublesome than the regulations themselves: a barrier is often perceived by the viewer even though it was not intended by the governing agency. The reading of non-existent prohibitions into regulations comes in part from misunderstanding and probably in part from a search for reasons to maintain the status quo. Whatever the reason, it is common for the practitioner to say that he is prevented by someone else's rules from adopting new behavior, even though further inquiry shows that the "someone else" has no such rules.

Implications: An early step in paving the way for the introduction of a novel program is to study state or federal regulations which interfere with its adoption. If such regulations are found, it is obvious that they must be changed before the innovation can be disseminated to schools except for hardy pioneers who are willing to defy existing regulations.

The regulations themselves are no more important than the perceptions the school people have of them. Whether they are accurate or inaccurate, those perceptions will have to be dealt with by disseminators. They should study the views of local adopters and then develop information to assure them that the innovation is acceptable under current state and federal regulations.

Where a regulating agency such as a state education department has actually endorsed the innovation, this should of course be pointed out to the prospective adopters.

10) Physical facilities modified

> Some innovations require more space; some require new subdivisions of old space; some require more flexible allocations of space from day to day. Prospective users need to know the spatial requirements of a new program.

Implications: The program description ought to contain information about desirable physical facilities for the innovation. However, because space in schools is at such a premium, the description should also stipulate the minimum conditions under which the innovation can be used and suggest alternative ways of housing it.

11) Time schedules amended

> The innovation may require more operating time, or a shift in time placement, or more flexible time scheduling. Crowded curricula and busy days in most schools mean that the time demanded by any innovation will be examined critically by almost every prospective user. High schools are a special case. Time shortages or unusual burdens upon the already-complex schedules which govern life in the high schools are sufficient reasons to reject an innovation which may be acceptable on all other grounds.

Implications: The description of the program should state clearly the time demands of the innovation. Moreover, the description should suggest alternative ways in which the innovation can be scheduled either by itself or in conjunction with other teaching. If the innovation can operate successfully over a range of time conditions, this range should be indicated. However, the lower end of the range should be clearly demarked so that prospective users do not get the impression that the innovation can succeed no matter how niggardly the time allotment nor how casual the scheduling.

12) Materials and equipment provided

> Elementary and secondary school teachers are heavily dependent upon instructional materials to provide the content and even to direct the methods of their teaching. Nothing could be more crucial to the success of an innovation than the ready availability of the necessary teaching equipment and materials. The prospect of facing a class empty-handed is unnerving at any time even to the most skillful of teachers. The prospect of having to do it during the installation of a new program is unbearable.

Implications: Disseminators should encourage schools to reduce teacher anxiety by having all teaching materials on hand in advance of initiating the new instruction. This way, teachers can become familiar with the materials and can be sure that they will be on the shelves on opening day.

As I have observed the process of educational change, it seems to me that teachers in the elementary and high schools learn a great deal of the content they are going to teach by studying the pupil's instructional materials. This leads me to suggest that whatever content the teacher needs to know should be included in the pupil materials -- perhaps with special points highlighted in the teacher's guide for emphasis. I cannot imagine any equally certain way to get the new information into the minds of the teachers themselves.

13) Initial staff training

> Of all the steps in adopting an innovation, the most consequential one is training the staff to conduct it. This is the key to success -- an inescapable requirement of authentic adoption. Novel content as well as novel pedagogy must of course be learned if the innovation demands both.
>
> It seems that training may be given successfully either before or during the introduction of the program. There is some reason to believe that content might be taught as well or better beforehand but that teaching methods are best interspersed with classroom practice. It also appears to be true that content may be taught through reading or standard courses, whereas methods should be taught in authentic workshops rather than in formal classes.
>
> It seems quite clear that guided practice over time is the only way to convert an appealing instructional idea into a living body of skills. In the best circumstances for teaching pedagogical skills, the teacher of teachers knows more about the innovation than those he is re-educating and has himself succeeded in using the program with children. Teachers learning the new approach should use it with their own students over a period of weeks or months and meet periodically with colleagues and outside experts to discuss their classroom experiences. Help should always be on call.

> All the equipment and materials teachers will need to teach the program should be employed by them during their training.
>
> If the program is to be used by a given group in a particular school, all members of the group should probably be trained at the same time. Otherwise, as indicated earlier, polarization of opinion around user and non-user groups may occur and inhibit diffusion.

Implications: Here again, the elaborate needs of the would-be user suggest elaborate steps which need to be taken by the would-be disseminator.

One way or another, disseminators must make training programs readily available to teachers in local school systems. Ideally, the training should be interspersed with actual classroom practice. Where this cannot be accomplished, refresher work or follow-up help to teachers is almost essential if the innovation is to be used as the inventors intended.

I think the training is best conceived as intended to improve the program rather than intended to improve the individual teacher. Since the program is the target, all those who teach the program need the training. There are clear advantages in giving it simultaneously to all staff members who need it in a given school building.

14) Continuing staff training

> Turnover in school faculties is so high that in-service training in the new approach must be available continuously. Otherwise the innovation can drift out of the schools along with teachers who leave. Moreover, periodic refresher work is good for those who remain.

Implications: The long-run answer to the problem of high staff turn-over and the need for continuous training is to build the new instruction into pre-service programs where teachers get it as a part of their basic training. This reduces the in-service problem considerably.

Now it should be pointed out that widespread in-service training probably has to precede widespread pre-service training. The reason is that the elementary and secondary schools must first be made ready to accept the skills of the new teacher just joining the faculty. It will not do to send even highly-trained young teachers out into the schools where the existing staff is totally out of sympathy with the views the newcomer represents. In any conflict between the impressionable young teacher and the well-established staff, you can place your bet on the well-established staff every time. Thus the established staff has to be retrained first.

As to the kind of refresher work for the existing staff after its initial training, courses and workshops are probably not as good as active supervision of their work coupled with periodic discussion meetings among the faculty. Without this supervision and continued discussion, the innovation is likely to undergo assorted mutations (few of them for its benefit) or fall into disuse altogether.

Conclusion

This paper is intended to make one major point: reports of the research which you conduct cannot simply be mailed out to practitioners. Research results must first be transformed into usable practice through the process we have called "development." And even after that the dissemination of these new forms of practice into elementary and secondary schools is a massive job -- expensive, complex, and long.

NOTE: Much of the material in this paper is taken from other published and unpublished papers by the author. Many of the ideas are dealt with in "Two Change Strategies for Local School Systems," Essay Seven, Rational Planning in Curriculum and Instruction, National Education Association, 1201 Sixteenth Street, N.W., Washington, D.C., 20036, 1967.

SELECTED BIBLIOGRAPHY FOR MUSIC EDUCATION RESEARCHERS

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Preface

The following list of references is compiled as a suggested library concerning sources and methods of research in Music Education, which is conceived here to be research on the teaching and learning of music in the schools. The volumes suggested here are believed to include the information and techniques needed for analyzing the problems in the teaching and learning of music in the schools. The list is based on the suggestions of the Conference participants as well as the suggestions of other scholars. There is no intent to provide a comprehensive list of basic volumes. The intention is to provide a direction of thought based on a list of specific volumes. Numerous other references may be found in the "References" sections of the Conference generative papers included in Part III of this report.

Berelson, Bernard, and Gary A. Steiner. *Human Behavior: An Inventory of Scientific Findings*. New York: Harcourt, Brace and World, Inc., 1964.

In addition to the findings, one chapter deals with "Methods of Inquiry." Both methods of design and of data collection are included. Methods of analyses are suggested throughout the book. Major headings or topics are: The Individual; The Family; Face-to-Face Relations, in Small Groups; Organizations; Institutions; Strata; Publics; The Society; and Culture. Also, see subheadings: Behavioral Development; Perceiving; Learning and Thinking.

Best, John W. *Research in Education*. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1959.

This book has been written primarily for the graduate student in education, but may be useful to educational workers who are interested in professional problem-solving or research in the field. The book discusses terminology, methodology, and some statistical measures in clear and concise language. The three areas of historical, descriptive, and experimental research are discussed in some detail.

Buswell, Guy R., *et al*. *Training for Educational Research*, U.S. Office of Education Cooperative Research Project Number 51074. Berkeley, California: Center for the Study of Higher Education, University of California, 1966.

The study deals with the problems of improving educational research. Various investigations were undertaken to discover the variables involved in the development of productive researchers. Analyses of education, type of degrees, students' attempted research, teaching experiences, courses in education, research methodology, statistical methods, length of time taken for degrees, and other variables are studied.

Chapin, F. Stuart. *Experimental Designs in Sociological Research*. (Rev.). New York: Harper and Brothers, Pub., 1955.

The author illustrates the method of experimental design by reproducing and analyzing exemplar studies. He recognizes three main types of experimental design applied to the study of problems in the natural community situation: (1) a cross-sectional design, (2) a "before" and "after" study, and (3) an *ex post facto* design.

Cook, Desmond L. *The Relation of Possible Hawthorne Effect Components to Stages of Experimental Investigation*. Columbus, Ohio: Bureau of Educational Research and Service, The Ohio State University, 1963.

This paper notes the several ways in which the term "Hawthorne effect" has been used in writings relative to educational research methodology and presents a heuristic relationship between the several uses of the term and the stages of experimental investigation.

Corey, Stephen M. *Action Research to Improve School Practices*. New York: Bureau of Publications, Teachers College, Columbia University, 1953.

The book is an introduction to the possibilities and practices in action research. One chapter includes a discussion of the uses of statistical measures in action research.

Cronbach, Lee J. *Essentials of Psychological Testing*. (Second Edition). New York: Harper and Row, Publishers, 1960.

This is a convenient compendium of the various psychological tests including a discussion of their purposes, uses, limitations, and statistical description.

Culbertson, Jack A., and Stephen P. Hencley (eds.). *Educational Research*: *New Perspectives*. Danville, Ill.: Interstate Printers and Publishers, 1963.

This is a collection of papers given at three seminars which were sponsored by the U.S. Office of Education. The papers fall into four basic divisions: environment of research, concepts, methods, and training. In Section III (methods), the uses of the various types of research are discussed as opposed to techniques, *per se*. Chapter Eighteen, dealing with "Guides for the Writing of Proposals," by Egon G. Guba, may be most helpful to the neophyte in the process of research proposal composition.

Dyer, Henry S., and William B. Schrader. *Manual for Analyzing Results of an Educational Experiment*. (Analysis of Co-variance). Princeton, N. J.: Educational Testing Service, 1960.

An experiment is given, in full, to explain the entire procedures involved. Work sheets are included for the reader to use for his own hypothetical case. Each step of the process is carefully explained throughout.

Ferguson, Leonard W. *Personality Measurement*. New York: McGraw-Hill Book Co., Inc., 1952.

This is a comprehensive presentation of the various methods for assessing personality, including statistical techniques and scale construction techniques proposed by Likert, Guttman, and others.

Gage, Nate L. (ed.). *Handbook of Research on Teaching*. Chicago: Rand McNally and Co., 1963.

Thirty-one authors, of national repute, offer papers dealing with four broad categories, namely: I. Theoretical Orientations, II. Methodologies in Research on Teaching, III. Major Variables and Areas of Research on Teaching, and IV. Research on Teaching Various Grade Levels and Subject Matters. The three central variables of the book are (1) teaching methods, (2) instruments and media of teaching, and (3) the teacher's personality and characteristics. Relevant variables are (1) social interaction in the classroom and (2) the social background of teaching. Site variables are (1) grade level and (2) subject matter.

Goldhammer, Keith, and Stanley Elam (eds.). *Dissemination and Implementation.* (Third Annual Phi Delta Kappa Symposium on Educational Research.) Bloomington, Ind.: Phi Delta Kappa, Inc., 1962.

The book consists of six papers dealing with the major topic of the Symposium. The individual papers are: (1) Problems in the Use of Electronic Data Processing for the Storage and Availability of Research Data, (2) The Role of Private Philanthropy..., (3) The Role of School Study Councils and Local School Districts..., (4) The Function of the U.S. Office of Education and the State Departments of Education..., (5) The Use of Inter-Institutional Agencies..., and (6) Problems in the Use of Communication Media....

Good, Carter V. *Introduction to Educational Research.* (Second Edition). New York: Meredith Publishing Co., 1963.

This book concentrates on concepts, principles, and procedures involved in the process of formulating a research project. A larger list of selected references is included at the end of each chapter.

Greenwood, Ernest. *Experimental Sociology: A Study in Method.* New York: King's Crown Press, 1945.

The book is a theoretical discussion of the fundamental logic of experimental designs. The author offers an extensive and critical examination of the literature. He has investigated the methods of a number of successful experimentors in order to determine their similarities and dissimilarities. Chapters VI and VII particularly deal with problems in setting up an experiment. He emphasizes the importance of identifying precisely the variables being studied in addition to establishing their formal relationship. The various types of social experiments are defined and discussed.

Guba, Egon, and Stanley Elam (eds.). *The Training and Nurture of Educational Researchers.* (Sixth Annual Phi Delta Kappa Symposium on Educational Research.) Bloomington, Ind.: Phi Delta Kappa, Inc., 1965.

The papers from the Symposium fall into three main categories: I. Training Problems, II. Existing Organizational Patterns, and III. Research Productivity. There are eight papers represented as well as a discussion about each paper and an overview by Guba. Issues and dilemmas facing educational research are discussed in some detail.

Harrison, Frank Ll., Mantle Hood, and Claude V. Palisca. *Musicology.* Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1963.

Harrison's essay concerns musicology in "The European Tradition and in America." Hood's essay is concerned with the effort to found a disciplined study of non-Western music in this country. See Palisca's essay for information more directly related to research in musicology. Palisca discusses definitions, musicology and related fields, American scholarship, areas of research, and gives an annotated section dealing with "Notable Achievements" in the area. Included in this section are general and period histories, handbooks, bibliographies, dictionaries, monographs, biographies, critical texts, and periodical literature.

Lazarsfeld, Paul F., and Sam D. Sieber. *Organizing Educational Research.* Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964.

This is an essay dealing with the problems involved in organizing research in five areas: (A) Individual vs. Bureau Research, (B) Research Dilemmas in Professional Schools, (C) Field Services and General Knowledge, (D) Independent Research Organizations, and (E) The Attitudes of Practitioners Toward Research.

Loughary, John W., *et al.* *Man-Machine Systems in Education.* New York: Harper and Row, Publishers, 1966.

It is the purpose of the authors to acquaint the reader with the three aspects of man-machine systems in education. These are (1) the variety of kinds of systems in terms of their functions, (2) a technical-philosophical overview or foundation concerning aspect no. 1, and (3) non-system

concerns which must be recognized and treated.

Maccia, Elizabeth S. The Conceptions of Model in Educational Theorizing. Columbus, Ohio: Bureau of Educational Research and Service, The Ohio State University, 1962.

The paper is in three parts: (1) sets forth a system of categories for conceptions of model and the significance of each type of conception for educational theorizing; (2) sets forth abstracts of the literature surveyed; and (3) generalizes and evaluates the conceptions of model in educational theorizing.

Miller, D. C. Handbook of Research Design and Social Measurement. New York: David McKay Co., Inc., 1964.

The book is designed to assist the researcher in finding information he needs quickly and in brief form when he is designing and conducting research. The author identifies four major areas where aids are commonly required. These are in research functions associated with research and sampling, statistical analysis, selection of sociometric scales or indexes, and research costing and reporting. Parts I and II provide information about research techniques. Part III gives a listing of approximately 38 social measures with a discussion of each. Additional measures utilized in the American Sociological Review during 1951-60 are included in a separate section.

Mouly, George J. The Science of Educational Research. New York: American Book Co., 1963

This book is concerned with research methods. The three parts of the book are: (I) Science and the Scientific Method, (II) Research Techniques, and (III) Research Methods. Each chapter concludes with a summary, questions, and references. Statistics are discussed, in part, and the reader is referred to books specializing in statistics for specific techniques.

Passow, A. Harry, et al. Training Curriculum Leaders for Cooperative Research. New York: Teachers College, Columbia University, 1955

This book discusses the methods and techniques to be employed in setting up and operating a conference for the purpose of training persons. Topics such as motivation, attitudes, behavioral skills, and dynamics of group action are discussed.

Shumsky, Abraham. The Action Research Way of Learning; An Approach to In-Service Education. New York: Bureau of Publications, Teachers College, Columbia University, 1958.

This book is concerned with the impact of conducting research on the researcher himself. The methodology of action research is described. Much emphasis is placed upon the value of action research as a learning experience.

Sieber, Sam D. The Organization of Educational Research, U.S. Office of Education Cooperative Research Project Number 1974. New York: Bureau of Applied Social Research, Columbia University, 1966.

The problem of measuring the numerous social conditions which might conceivably impinge on the production of research and on researchers by graduate schools of education was undertaken in the study. Major topics are: Value Climates and Arrangements for Research; Recruitment Policies, Joint Arrangements with Other Departments, and Substantive Areas of Research; Research Units in Schools of Education; The Managerial Scholar; Relations Between Service and Research; and Training for Careers in Educational Research.

Smith, B. O. (ed.). Education and the Structure of Knowledge. (Fifth Annual Phi Delta Kappa Symposium on Educational Research). Chicago, Ill.: Rand McNally and Co., 1964.

The book includes eight papers delivered at the Symposium. The individual papers are entitled: (1) Problems, Topics, and Issues, (2) The Architectonics of Knowledge, (3) The Structure of Knowledge in the Arts, (4) Zetetics and Areas of Knowledge, (5) On the Structure of Physical Knowledge, (6) The Structure of Knowledge in the Social Sciences, (7) Some Psychological Aspects of the Structure of Knowledge, and (8) Knowledge Structure and the Curriculum.

Spiess, Lincoln B. Historical Musicology: A Reference Manual for Research in Music. New York: Institute of Mediaeval Music, 1963.

The manual presents in its first part an introduction to the problems of research in the various epochs of Western musical culture and includes a large assortment of topics as suggestions for term papers or seminar reports. The second part presents a selective bibliography of studies directly related to these topics.

Travers, Robert M. W. An Introduction to Educational Research. (Second Edition). New York: The MacMillan Co., 1964.

The author emphasizes the importance of indirect approaches to the solution of educational problems. He also discusses methods, techniques, measurement, data-processing, etc. A summary and "problems for the student" are included at the end of each chapter. The use of statistical measurement is discussed, but statistics, *per se*, are not included in the book.

Van Dalen, Deobold B. Understanding Educational Research: An Introduction. New York: McGraw-Hill Book Co., Inc., 1962.

This is a comprehensive text including methods, concepts, resources, techniques, descriptive and inferential statistics, and the writing of the research report. The various types of research, including historical, descriptive, and experimental, are treated in detail. A large appendix includes statistical tables, examples of hypothesis construction, deducing the consequences, criticism of a theory, etc.

Villemain, Francis T. Philosophic Research in Education. New York: New York University Press, 1953.

This is a succinct statement of the philosophic method, conceptual tools, types of philosophic inquiry, procedures, and assessment. The author emphasizes the relation of philosophic inquiry to educational theories and practices. A selected bibliography and an appendix, which discusses the "distinctive nature of the discipline of the philosophy of education," are included.

Part IV

THE ABSTRACTS

SUMMARY

Title: A Conference on Research in Music Education

Director: Henry L. Cady

Institution: The Ohio State University Research Foundation
Columbus, Ohio 43212

Project No.: 6-1388

Duration: June 15, 1966 - May 31, 1967

Part I: The Conference

Problem

Research in Music Education is not as plentiful nor as adequately performed as it should be. This condition has been known since the 1930's and yet certain inadequacies persist. One can identify the following problem areas:

1. College and university faculty in Music Education generally do not understand the meaning of research.
2. The concepts of faculty members are vague concerning what problems are relevant to Music Education.
3. The faculty in Music Education generally do not understand research techniques to the extent that they can produce competent research themselves or advise students in planning their research projects.
4. Graduate programs generally do not provide either the philosophical or technical competencies adequate for the research problems undertaken by graduate students.

Implicit in these conditions are several questions pertaining to the nature of Music Education and its research, the prerequisites to research in Music Education, the relationship between research in related disciplines and research in Music Education, and the relationship of Music Education research to the teaching and learning of music at all levels of education.

It was evident that a meeting of persons who could consider these problems and propose guidelines was overdue.

Objectives

The purpose of the project was to establish a clearer definition of the role, prerequisites, and goals of research in Music Education which would be authoritatively supported by researchers in Music Education.

The purpose of the Conference was to bring together a group of researchers and consultants from related endeavors who would provide:

1. a clarification of the perimeters of Music Education;
2. a clarification of research in Music Education;
3. an exposition of the relationship between Music Education research and other disciplines such as psychology, sociology, and musicology;
4. an estimate of the responsibilities of research to the various facets of Music Education, i.e., to the educational program in music from kindergarten through doctoral programs;
5. an analysis of prerequisites to research activity and to the education of a researcher;
6. a suggested program for the education of researchers who would be competent to meet the complex needs of school music in an increasingly complex society;
7. a suggested list of priority projects for researchers in Music Education;
8. a suggested set of criteria for research relevant to the unique activities of Music Education in terms of the developed definition.

Procedures

The project was composed of three phases -- preparation, meeting, and report.

Phase I of the project was devoted to the preparation of materials, obtaining data for a basis for Conference deliberations, organizing the details and events of the project, and the selection of personnel. There were several bases for the selection of personnel:

1. Veteran researchers in Music Education.
2. Members of the Music Educators Research Council.
3. Grantees of the U.S. Office of Education.
4. Individuals representing positions of crucial importance for the development of research in Music Education.
5. Scholars from endeavors related to Music Education acknowledged for their potential value as contributors to the Conference.

The Conference participants included seventeen scholars from Music Education and single scholars from the areas of music history, music theory, psychology, sociology, education (research, training of researchers, and utilization of research), support for research, and institutional organization for research.

Phase II of the project was the Conference itself, which consisted of a seven-day meeting, February 26 - March 4, 1967. The first four days were allocated to mutual education through papers and discussions. The final three days were devoted to committee deliberations and the writing of projections for change in the various facets of Music Education research. The topics assigned to the Committees were:

1. The Nature of Research in Music Education.
2. Problems for Research in Music Education.
3. The Training of Music Education Researchers.
4. The Facilitation of Music Education Programs for Research.
5. The Utilization of Research in Music Education.

Phase III of the project included three types of activity. First, the final report was composed. Second, articles and releases for journals were composed. Third, a two-day dissemination symposium at The Ohio State University was planned for June 23 and 24, 1967.

Part II: Projections for Change

Each Committee was given a charge to compose a report of the Conference's deliberations about a specific aspect of research in Music Education. This was the means chosen by which the Conference could fulfill its intention of establishing criteria for improvements in the condition of research. The following sections are abstracts of the Committees' reports.

Research in Music Education

Man, in seeking information about phenomena in the world which surrounds him, has utilized a variety of methods ranging from personal belief and experiences to scientific inquiry. Not all intellectual activity directed toward understanding one's environment can be called "research." Research as a methodology, utilizes the principles and processes of the scientific method.

With respect to natural phenomena, or facts, it must be assumed that these do not occur by chance but are determined by antecedent events; the psychological and social behaviors of man, however, have the characteristic of nonrepeatability.

Education, as a social institution which man has contrived for his own welfare, has characteristics commensurate with human characteristics. Since the content of education is human-centered, the discrete elements in the process of education become, by definition, nonrepeatable. Nevertheless, by reliable and objective observation, systematic methods for recording and retaining objective data, and the application of objective and logical reasoning to the interpretation of data describing the processes of education, generalizations about those processes and the human interactions associated with, and contributing to, the educative process can be formulated. "Research in education," in current practice, follows four general modes of inquiry -- descriptive, experimental, historical, and philosophical -- to examine the sociological, psychological, and biological man in the physical setting of formal education.

There appears to be reasonable agreement that research in music can take place in the broad areas of music in which teaching and learning occur: (1) musicology, (2) theory, (3) performance, and (4) music education. Music Education is a broad term which can be viewed as a process whereby a deliberate attempt is made to facilitate musical learning.

Critiques of the proposed definition (that proposed by Schneider and Cady) and subsequent discussion resulted in arriving at the following definition of Music Education as the central concern of this Conference:

> For the purposes of this Conference, we are primarily concerned with the responsibilities of the professional music educator for the teaching and learning of music in the schools of our country.

Acceptance of this operational definition provided the necessary guidelines for the subsequent work of the Conference.

There should be no question as to the characteristics of research in Music Education; it employs those procedures and techniques relevant and appropriate to the problem under consideration. The humanistic and behavioral aspects of Music Education must be constantly before researchers as they deal with the many problems which remain unsolved.

The contributions of the other fields and disciplines provide information that may be of either peripheral or central interest to a given problem in Music Education. And the researcher himself is not one kind of person, with competencies in all areas, but rather a kind of person who will develop unique competencies which permit him to function either individually or as a member of a team.

Problems for Research in Music Education

The broad field of problems for research in Music Education was described as including the student of music and the teacher of the student as well as the content appropriate to the experiences desired for the student of music in the school.

The urgency for research in specific facets of any area may vary according to the problems identified in local situations. The central variables which constitute the urgent problems in Music Education fall into five categories -- The Student, The Teacher, The Teaching-Learning Process, The Content of Instruction, and The Constraining Factors. The priority given to those five categories was predicated upon the assumptions, empirically derived, that those categories include either constant or recurrent concerns of music educators and that problems associated with those categories remain as basically unexplained behavioral phenomena. Examples of kinds of phenomena that might be associated with each problem category are given.

A suggested matrix design is proposed as an aid in establishing the focal point which relates the nature of a problem and its appropriate methodology. Through the identification of urgent categories of research in Music Education and an illustration of a matrix approach to conjoining the five categories of problems and four methods of inquiry, the report (1) defines the constituents or categories of urgent problems in Music Education, (2) lists typical problems in these categories, and (3) indicates methodologies appropriate to the study of illustrative phenomena.

Developing Researchers

Two functions of graduate study in Music Education are identified: (1) the preparation of music educators for a variety of existing roles in the Music Education enterprise, and (2) development and orientation of the graduate student toward research and basic research skills. The report includes the observation that graduate programs in Music Education have been frankly oriented toward preparation for teaching, performance, and service roles and have placed only a minor emphasis on preparation for the role of the researcher. Because of the improved status of research endeavor, availability of funds for the support of research, and the growing demand for qualified researchers, effort should be concentrated on preparing music educators who are qualified to fill the dual role of the researcher on educationally-oriented problems and the teacher of researchers. It is proposed that recruitment and selection of researchers in Music Education can be improved through: (1) making undergraduates aware of careers in research in Music Education; (2) encouraging students who are enrolled in liberal arts programs with majors in music, psychology, sociology, physics, and other scientific and humanistic disciplines to undertake certain types of pure research the product of which would be related to Music Education; (3) having at least one prominent faculty member in the Music Education division functioning in a research role; and (4) obtaining aid in the form of assistantships and fellowships and non-service grants.

In order to prepare career research specialists in the degree program, it is proposed that, in addition to the concentration of studies devoted to music and Music Education, as much as half of the research student's time may be devoted to work especially designed to develop his research competence. An added recommendation is that the graduate program of the research student be fluid and personally designed.

The report suggests that research-oriented specialists in contributory and related disciplines be utilized in in-service seminars established for the up-dating of Music Education staff members in the use of research tools and design techniques.

Finally, attention is given to the graduate student as a consumer of research. It is proposed that, as a means toward achieving research understandings and competencies, miniature research projects be included in the courses of study for all graduate students.

Facilitation of Research Programs

The key person in the study of the teaching-learning process in music is the Music Educator, and in the present day, more and more of the responsibility for the genesis and facilitation of research rests on his shoulders. This report devotes itself to suggestions as to how the music educator, particularly at the university level, may fulfill this responsibility.

Among the recommendations for facilitating research in Music Education are the following:

1) That the head of the Music Education department provide the motivating force in improving teaching methods and materials through the utilization of the results of competent research;

2) That administrative policies in the colleges within the university give status to the research interests and activities of the faculty;

3) That the unique educational environment of the individual university be carefully considered and those factors cultivated which have the greatest potential for improving the climate for research;

4) That the various professional organizations, at all levels, contribute to the improvement of attitudes toward research;

5) That support by the Federal Government, and specifically support for research projects in the Arts as well as in education, should be viewed as an encouraging development which should further enhance the climate for research in Music Education;

6) That a research bureau, foundation, or other administrative agency in the university should be utilized by the music education department in facilitating the initiation and execution of funded projects;

7) That legal agencies for public education, such as state and city departments of education, join with the university in cooperative research endeavors.

The effectiveness and utility of research are often limited in the university setting by (1) not apprising the entire staff of a division of proposed research, research in progress, and completed research; (2) the lack of student awareness of research activity; (3) the lack of student involvement in pilot studies and miniature research projects; and (4) permitting situations to surround a research endeavor which result in adverse human dynamics.

Music educators in the past have not fully realized the potential for support from agencies outside the immediate educational setting such as industrial, private, and governmental agencies and the music industry. There are many sources of financial support and advice for the competent researcher who knows well his goals, how to obtain them, and whom the research findings will benefit.

Utilization of Research

To the field of Music Education, the ultimate value in research is realized when it is successfully applied to some element of the teaching-learning process. The popular belief a few years ago that the time lag between research and its implementation in the public schools is roughly a generation is untenable today. Technological recording, transmission, and retrieval of research findings expedite the availability of the findings and products of research to the extent that the utilization can begin even before findings are complete.

Research-based knowledge can be transmitted in its original language, translated into the proper language for a wide variety of audiences, and transformed into useful practice. Research results must be transformed into musical practice through the process called "development." The process of development makes obvious the possibility that the researcher and the practitioner may pursue their discrete functions without mutual involvement provided adequate developmental processes and procedures have bridged the distance between their discrete roles. For example, in Music Education a new finding needs to be thoughtfully related to the objectives of the music program, transformed into a sequence of activities and musical literature appropriate to the particular grade level, supplemented by any recordings or instruments prescribed to fit instructional needs, and explained in terms of clear and concise directions for the teacher.

Most reports of research can not simply be mailed out to public school teachers. Research results must first be transformed into usable practice through the process called "development." The utilization cycle will not be complete until the mediators have transformed research findings into usable forms and the practicing musicians have adapted and adopted this knowledge into Music Education practice.

Part III: The Generative Papers

Seventeen papers and reports were presented to the Conference. The objective of these was the mutual education of the Conferees such that projections could be developed which would be based on authoritative information. In addition to the papers and the reports, a bibliography of selected volumes, primarily concerning research methodology, was compiled and annotated. The papers, reports, and forms for data-gathering appear in the final report.

Part IV: The Abstracts

A summary of the project was composed and an ERIC Report Resume completed.

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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ABSTRACT

A Conference on Research in Music Education sponsored by the USOE and The Ohio State University was held in Columbus, Ohio, February 26 through March 4, 1967. The Conference was developed because of concerns about the quality and quantity of research in Music Education. The purpose of the Conference was the development of guidelines for the improvement of research in Music Education. The problems discussed included the nature of research peculiar to Music Education, as differentiated from other fields of research, such as music history, music theory, music performance, education, psychology, and sociology. Priority areas for research were identified, most of them being uninvestigated behavioral problems in the teaching and learning of music in the schools. The need to redesign graduate education in order to develop a variety of versatile researchers who can identify and examine contemporary problems in Music Education was agreed upon. The organizational forms for facilitating research were discussed and recommendations made. Methods for the more efficient use of research were discussed and suggestions projected. These deliberations were included in five committee reports under the general heading "Projections for Change in Research in Music Education." The Conference participants included seventeen music educators who were selected on several bases: (1) recognized researchers in music education, (2) members of the Music Educators Research Council, and (3) individuals important to Music Education research. Consultants from various music and nonmusic areas of endeavor provided papers and assistance.